

India is a land of ancient culture. Ancient Indian scripture “Vishnu puran” states -

“ऊत्तरं यत्समुद्रस्य हिमाद्रेश्चैव दक्षिणम्,
वर्षं तद् भारत नाम भारती यत्र संसतिः।”

It means India extends from the Himalaya in North to the Indian ocean in the South. It is said that new descendants are called Indians. In the beginning of any auspicious ceremony, Bharatvarsha, Bharatkhand, Jambudwip and Arayavarta etc. words are used while taking resolution. Our country is gifted with the natural boundaries Himalaya in the North and sea in the East, West and South. From all over the world different countries mesmerized by the Indian prosperity and came to trade, settled and mingled with Indian culture. Due to mutual exchange many changes have been seen in our culture. In this way, our heritage is transferred from generation to generation and it is continuously progressing.

India : Location and Area

We have already studied in std.-IX about the present area and location of India. It was very vast in ancient time and now areawise it stands on the 7th rank and populationwise on the second.

Rich and varied Heritage

Our mother land has bestowed rich and varied heritage to us so as to the world. Indian culture have been trade oriented and peace loving. ‘Sat’, ‘Chit’ and ‘Anand’ are realized from Indian culture. Beside this Indian culture prospered with the mutual exchange of different - cultures of other countries which came to India and settled here. They have accepted the values of non-violence and peace which have been adopted and admired by the world. People, right from the beginning of Indus-valley civilization till today, have made our country rich and wealthy with their intellectuality, ability, talent and skill. Innumerable scholars, thinkers, artists, artisans, sages, saints, scientists and historians have contributed to the growth and development of our culture. Culture is a sum of habits, values, customs, traditions and conduct of life style of human.

Meaning of Culture

Culture means a way of life. It is made of changes that occur in public life, social rules and regulations of different societies. It can be said that culture is a total of habits, values, customs, traditions and ideals leading humans to the highest level.

Cultural Heritage of India :

Heritage means a valuable gift from our forefathers to us. Indian history is thousands of years old. We say in school pledge “I Love my country and I am proud of its rich and varied heritage”. In this context, heritage is a precious gift from our motherland to the whole world, about mysteries of human life. We divide our heritage into two divisions :

(1) Natural heritage of India (2) Cultural heritage of India

(1) Natural Heritage of India : The result of close relationship between nature, environment and human-life is natural heritage. Natural heritage of India is unique and varied. It includes, features like mountains, forests, deserts, rivers, streams, seas, trees, plants, creepers, flowers, leaves, insects and varied landscapes, wide range of minerals, vegetation, plants and animals. We are the children of Nature, so it has made a beautiful arrangement for our food, water, fresh air and dwelling to cater our all needs. We treat nature with respect and faith. The examples of our close relation with nature are stories of ‘Panch Tantra’ and ‘Jataka Tales’ of Buddhist religion. Our classical and folk music and several ragas are based on ‘Prahar’ (Period of a day). Similarly, Ayurveda, Unani and Nature Cure are also totally based on nature.

(1) Landscapes : Beautiful landscapes are generally formed due to different shapes of land. For example, the Himalaya is a landscape. It has endowed Indians abundantly with useful vegetation and minerals. Strange birds - animals and mountain peaks covered with snow, brimming rivers are the gift of Himalaya. Forests of Terai and its pilgrimage places for e.g. Amarnath, Badrinath, Kedarnath and summit like Nandadevi are in Himalayas. Since ancient time Himalaya has a greater importance for India.

(2) Rivers : Rivers have been providing natural ways since ancient times. Indian culture has flourished on the river bank of the Indus and the Ravi. The rivers like the Ganga, the Yamuna, the Saraswati, the Indus, the Narmada, the Godavary and the Krishna etc. have profoundly influenced the people of India. Rivers are the source for drinking water, domestic use, irrigation, electricity and water ways. Beside this, man was dependent on river to develop industries of clay utensils, plastering and building of houses. River water has made human life beautiful and prosperous. Landscape scenes at dawn and dusk are very fascinating on the side of river, these are source of inspiration for artists and have enriched the lives of the people by developing the aesthetic sense.

(3) Vegetation : People of India are environment lover since ancient time, its proof is their love and affection towards flowers and shrubs and plants. Humans, animals, birds etc. are dependent on trees for their food. Banyan and Pipal tree and basil are worshipped in India. Cereals, pulses, oil-seeds plants, green fields, prosperous herbs packed forests and medicinal plants have ultra enriched our life from ancient time. Harde, Ambala, Bahenda, Aloe-vera, Arduci, Neem etc. medicines and flowers like Rose, Lotus, Mogara, (Jasmine) Damara (Sweet Basil), Sunflowers, Champa (Plumeria), Jui (Polianthes Tuberosa), Jasminum etc. have made human life very beautiful, fragrant, healthy and prosperous. Thus, social and religious life of India is greatly influenced by the vegetation.

(4) Wild life : India is a nature lover since ancient time. It is a country with animal lover culture. Tiger, lion, elephant, rhino, foxes, bear, deer, sambar, rabbit, python, snake, mongoose, lizard, porcupine like many such organisms are found and seen. Asian lions in the world are found only in the Gir forest of Gujarat. Our religious belief has given a status of God-Goddesses’s vehicle to some of the wild animals - tiger, peacock, alligators, eagles etc. Our national currency is highly valued by having the

figure of four lions, horse and bull. Further more, to protect the wild life reserves are created and even laws for the protection of their life have been enacted.

(2) Cultural Heritage of India : India has gifted to the world a diverse and rich heritage. Cultural heritage is a man-made heritage. Whatever is received or created by human with his tact, wisdom, art and skill is called cultural heritage. Starting from Aryans, Kshatrap, Kushan, Huns, Persians, Turks, Arabs, Mughal, Britishers, French etc. castes and tribes have come to India. Indian culture from the exchange between all this has become rich.

The people of India from the pre-historic period have contributed to the people of the world. The art of architecture and sculpture are 5000 years old. The remains of Indus Valley Civilization is an evidence of this. On seeing the remains of the figures of Gods and Goddesses, humans, animals and several toys as well as sculpture of a bearded man and the statue of a dancer, one feels self-esteem and pride in our cultural heritage.

Further when we look at the figure of bullock or lion on an inverted Lotus of Mauryan Era, the statue of Gautam Buddha in a meditative form or the Kalkhand statues of Jain tirthankars, the caves of Ellora of Rashtrakuta dynasty etc. By seeing this heritage we feel, proud, glad and also respect for our cultural heritage.



1.1 Bearded man's Sculpture

Our cultural heritage accommodates palaces, buildings, sculptures, stupas, viharas, chaityas, temples, mosques, tombs, forts and gates. Even historical places of our freedom movement like Sabarmati Ashram, Dandi, Bardoli, Vardha, Shantiniketan (Kolkata), Delhi etc. can also be considered as a part of our cultural heritage. Besides, language, script, discovery of zero, mathematics, calendar, astronomy, iron, literature, religion, yuddhashashtra, chariot, political science, zoology, botany, vastushastra, religion, republic, judiciary, legislation, environment protection etc. are the important discoveries of India.

Cultural Heritage of Gujarat :

The places having cultural, legendary and archaeological importance are Lothal (Dholka taluka), Rangpur (Limbdi taluka in Surendranagar district), Dholaveera (Kuchch district), Rozadi or Shrinathgadh



(Rajkot district) etc. The places of pilgrimage are victory tower of Vadnagar, stone inscription of king Ashoka at Junagadh, Sun-temple of Modhera, gate of Champaner, Rudra Mahalaya of Siddhpur, Mansar lake of Viramgam, Jama Masjid of Ahmedabad, Jhoolta Minara (Shaking towers), Sidisaiyed ni Jali (grill), temples of Hathisinh, Sahastralinga lake of Patan, Rajmahal of Vadodara, tomb of Mohabat

1.2 Stone Inscription of Ashoka

Khan, Parsi Agiyari of Navsari are worth seeing places. Places having religious importance are Dwarkadhish temple of Dwarka, Shardapeeth of Jagadguru Shankaracharya, Somnath temple one of the 12 Jyotirlinga, Ambaji in North Gujarat (Banaskantha district), Bahucharaji (Mahesana district), Ranchodrai temple - Dakor (Kheda district) and Shamlaji (Aravalli district) etc.

Well known religious, social and tourism oriented places in Gujarat are Polo Forest, Vijaynagar (Sabarkantha district) Kite festival, Kankaria carnival (Ahmedabad), Tana-Riri festival (Vadnagar), Northern dance festival (Modhera), Rannotsava in Kachchh etc.

Tourist Places of Jain and Buddhist : Jain and Buddhist religion prevailed in India. Consequently, Jain and Buddhist caves are seen at various places in Gujarat - Vadnagar, Taranga, Khambhaliya, Shamlaji, Koteswar, Talaja, Dhank, Jhagadiya etc.

Fairs of Gujarat

Varied culture of Gujarat is seen in many places. Hence, fairs having traditional, religious and social importance are held. Some important fairs among them are given below :

Sr.	Name of fair	Place of fair	Tithi/time of fair
1	Modhera fair	Modhera (Mehsana)	Third week of January
2	Bahucharaji fair	Bahucharaji (Mahesana)	Chaitra sud Poonam
3	Shamlaji-Thakorji fair	Shamlaji (Aravalli)	Kartik Sud 11 to Punam
4	Bhadarvi Poonam fair	Ambaji (Banaskantha)	Bhadarvi Poonam
5	Bhavnath Mahadev fair	Girnar (Junagarh)	Magh vad 9 to 12
6	Tarnetar fair	Tarnetar (Surendranagar)	First week of Bhadrapad
7	Bhadiyad fair	Bhadiyad (Ahmedabad)	Rajab Month Date. 9, 10, 11
8	Naklang fair	Koliak (Bhavnagar)	Bhadarva vad Amas
9	Madhavpur fair	Madhavpur (Porbandar)	Chaitra sud 9 to 13
10	Vautha fair	Dholka (Ahmedabad)	Kartak sud Poonam
11	Miradatar fair	Unava (Mahesana)	Rajab Month 16 to 22
12	Dang's Darbar fair	Ahwa (Dang)	Falgun Sud Poonam
13	Gol Gadheda fair	Garhada (Dahod)	5 to 7 days after Holi
14	Kartik Poornima fair	Somnath (Gir)	Kartik sud Poonam
15	Bhanguriya fair	Kwant (Chhota Udaipur)	from Holi to Rang Panchami

India : Land and People

Primitive men came into existence simultaneously in India and Eastern South Africa. Mesmerised by varied and prosperous heritage many foreign tribes came to India. Consequently, the remains of all tribes are found here.

The Dravidians were considered to be the most ancient people of India. But the modern researcher of linguistic and anthropology have proved that even before the Dravidian, six more tribes came and settled in India. Lets explore more about them.

(1) Negritoit (Habsi people) : Some historians believe that negrate or Negrose are the most ancient inhabitants of India. They came from Africa via Baluchistan to India. They were black having height of 4 to 5 feet and curly hair.

(2) Australoid (Nishad people) : People of this tribe came from South East Asia. Their physical features were : black skin with broad head, flat nose, short in height etc. The ‘Aryan’ who came later on to India call them ‘Nishad’. The origins of the tribes like ‘Kol’ and ‘Munda’, Khasi, tribes of Assam, the tribes of Nicobar and Myanmar have similarities to the Australoids. Their contribution in the development of Indian culture and civilisation is immense. They made clay utensils, wore cotton cloth and knew many other skills. They had great religious beliefs too.

(3) The Dravidians : Originally Dravidians belonged to India. They were the direct decendents of stone age civilization and the creator of Mohen-Jo-Daro culture. The tribes which came from North survived with their language and cultural features, later on they were only called as Dravidians. Dravidians gave the concept of mother as a ‘Goddess’ and father as a ‘God’. So the thought of Parvati and Shiva as mother and father developed. Moreover, the tradition of worshipping Nature is the gift of the Dravidians. The tradition of worshipping with ‘Dhup’ (incense stick), ‘Deep’ (lamp) and ‘Aarti’ are considered to be the gifts of the Dravidians. Besides, nature and animal worshipping etc. are their great features. Original dieties of Dravidians have been accepted by Aryans and were re-established by them as a God of culture with pace of time. Under the tremendous influence of north, Aryan culture was deeply, internalised by the Dravidians. Hence, intercaste marriages took place. Dravidians had matriarchal system of family. Dravidians progressed a lot in different crafts and arts like building of boat and raft, weaving, spinning, dyeing etc. Due to the dominance of the Aryans, they shifted to South India and settled there. As a result, today we can see the people speaking Dravidian-family languages like Tamil, Telugu, Kannada and Malayalam etc.

(4) Other Tribes : Apart from above, Mongoloid, Alpine, Dinarik and Armenoid tribe were also there in India.

Mongoloid : They came to India from North China via Tibet and settled down at North Assam, Sikkim, Bhutan, West Bengal etc. They gradually Indianized themselves. Mongoloid people possessed the physical characteristics like yellow complexion, flat face, chubby cheeks, almond shaped eyes etc. Having yellow complexion, Mongoloid were known as “Kirat”.

Alpine, Dinarik and Armenoid : These people migrated from Central Asia. All these three tribes have similarities. The origin(genes) of these tribes are found in a large number in Gujarat, Saurashtra, Maharashtra, Bengal and Odisha (Formerly known as Orissa).

(5) The Aryans : The Nordic - Aryans were the creators of Aryan civilization in India. Hindus were called Aryans in the ancient time and the area where they were densely populated was called 'Aryavrata'. As seven rivers were flowing over there, that region was named as 'Sapta Sindhu'. In ancient time the first Aryan population was concentrated in the North - West. The area of 'Aryavrata' was extended upto Mithila (Bihar) in the East; in South it spread upto Vindhyaachal during post vedic period. They were more advanced people than any other contemporary tribes. This vast land was recognised with various names as Bharatbhumi, Bharatkhand and Bharatvarsha etc. after the name of the king Arya Bharat or Bharat-kul tribe.

Aryans were nature lovers. They loved, and worshipped the trees, the rivers, the mountains, the Sun, the wind and the rain. They had composed hymns (Richas) for praying to various natural elements.

In due course of time some religious ceremonies like recitation of vedas, performing yagya and other activities became prevalent in India.

There was a fine amalgamation of those tribes with their specific style of living and harmonious culture was formed, which gave India a glorious and prosperous heritage. These foreigner and Indian tribes amalgamated in such a way over a long period of time that they lost their individual identity through intercaste marriages. Outsiders and local people were greatly influenced by languages, script, names and religious beliefs etc. played a vital role in Indianizing these foreigners. Since ancient times, a composite culture has been created in India.

They all then became Indians. In short in ancient India the amalgamation of various cultures enriched Indian culture by making it variegated and prosperous.

Preservation and Conservation of Heritage

Each aspect of Indian heritage made India eye catching, picturesque and attractive. Heritage brought glory to the nation. India attained a leading position in the world by keeping its rich heritage protected and preserved. Thus, it is the primary and pious duty of every citizen of India to see that nobody harms the ancient memorials and also to preserve places having historical importance and values. In our constitution, the fundamental duties of Indian citizens are mentioned in Article 51 (A). In that (6), (7) and (9) describe the following duties for preservation of our cultural heritage. They are given below :

- To understand the importance of our harmonious culture, prosperity and to preserve it.
- Maintain the forests, tanks, rivers, ponds and the wild animals and birds along with maintaining the natural environment and to show compassion for all the living creatures.
- The protection of public property and giving up violence are also included in it.

Thus, nature has created beautiful landscapes. We should maintain the purity, sanctity and beauty

of these places considering it to be our moral duty. The Indian heritage is an outcome of the development of the people of India over a long period of time. Nature has generously donated abundant prosperity to India. India achieved invaluable opportunities in all the fields for gradual development due to India's peculiar natural structure.

In this way, the Indian heritage is a result of the development of the people of India in the social, economical, political and cultural fields over centuries.

Exercise

1. Answer the following questions in detail :

- (1) Give details of the Aryan and Dravidian race.
- (2) Explain the meaning of culture and give its details.
- (3) "Cultural Heritage of Gujarat" - Explain in detail.

2. Answer the following questions pointwise :

- (1) Explain our constitutional duties for preservation and conservation of Heritage.
- (2) Explain the meaning of natural heritage and state what does it comprise of ?
- (3) Write about cultural heritage of India.

3. Answer the following questions in short :

- (1) What is the other name by which Aryans were called ?
- (2) Write a short note on Negritoit (Habsi).
- (3) Which animals are shown on our national currency ?

4. Answer each of the following question selecting the correct option from those given below :

- (1) The word 'Lokmata' is used for
(A) Bharat (B) Nature (C) Rivers (D) Paniharies
- (2) Find out the correct match.
(A) Shardapeeth - Somnath (B) Polo festival - Vadnagar
(C) Northern dance festival - Modhera (D) Sidi saiyaad Grill - Bhavnagar
- (3) Which language does not belong to Dravid language group ?
(A) Hindi (B) Tamil (C) Kannada (D) Malayalam

Activity

- Study places of India in Atlas.
- Visit different tourist places of Gujarat.
- Arrange visit to the different fairs of Gujarat.
- Get information about trees which are nationally renowned. For example Neem tree of Lunva in Sidhhapur and Banyan tree of Kantharpur (Gandhinagar district).

Cultural Heritage of India : Traditional Handicraft and Fine Arts

India is a country of rich cultural heritage. It includes materialistic and genetical heritage. A child inherits physical and mental characteristics from the parents by birth is known as ‘genetic inheritance.’ Whereas house, land, estates like properties obtained from ancestors is called ‘material heritage’. Similarly, whatever man obtains or creates with his intellect and skill is generally called cultural heritage. In the same manner traditions, customs, rituals and especial types of life style adopted by our ancestors is also known as cultural heritage. In addition other matters like education, farming, trade, rules and regulations for daily life, festivals, entertainment, art and handicrafts, beliefs and skills are also included in cultural heritage.

India being an ancient country of the world, has its best traditions, social values, dogma, customs and family system. So it is our duty to preserve our cultural heritage. There are references of 64 arts in our ancient literature. They are handicraft, workmanship (skills), kasab, art, drawing, music, dramatic art and dance etc. Our ancient currencies were also valuable. Prosperity of India was main attraction for visitors to attack India. Today the education of Yoga has been considered as a part of cultural heritage, which has been accepted by the whole world. Consequently 21 June is celebrated as the ‘World Yoga Day’ in the whole world.

In this chapter we will learn about varied art and craft of India.

Art of Indian Artisans

The beauty of Indian cultural heritage is lying in traditional art of its artisans. They have skillfully developed varied life style of people through their remarkable art and handicraft industry. Weaving and embroidery, wooden art, clay work, drawing, painting, leather industry, enamel work, sculpture, architecture, akik work, diamond related artistic workmanship and knitting work have their unique identity in India.

Art Clay Work

Man and clay have been closely associated since ancient time. The whole life of men revolves around it from the cradle to the grave. Before the invention of metal, clay things were used abundantly. Toys, pots, pitchers, earthen lamps, clay stove (chulha), clay wares were made by the potters to store grains, milk, ghee, curd and buttermilk. Maximum kitchen wares were made up of clay. The walls of the houses, kubas (huts) were plastered by the paste of cowdung and clay. We have got many clay utensils of red colour that belonged to Lothal, Mohan-Jo - Daro and Harappa culture of ancient time. Potter’s wheel is considered to be the best device for clay-work in ancient India. In present time also we can see garba (Pitcher having holes containing earthen lamp inside) in Navratri.

India was famous for producing the baked utensils of baked clay as well as unbaked clay (terracotta) since ancient time. This is known by seeing remains of old and handmade clay utensils found from Nagarjuna kaunda in South India and Laghnaj (Mehsana district).

Art of Weaving

The art of making long threads using small pieces of cotton from cotton balls (swab) and joining them together is called art of spinning. We all know that Gandhiji has given it a special importance as a cottage industry and joined it with swadeshi to make us self reliant under the banner of freedom movement, which has created a new history.

Hand Weaving : Since ancient time, India is known for its textile know-how. It is well-known that the whole piece of cloth of a particular size (Taka) of fine muslin of Dhakha could easily pass through a ring



2.1 Hand-woven Carpets

and could be adjusted in a match box. Moreover, carpet (Galicha) of several regions, knitting work on attires and artistry etc. occupied a prominent place. Amongst them Patola of Patan, Kanjivaram and Banarasi sarees, Bandhani of Rajasthan are unique identity of India.

During the golden period of Solanki era, Gujarat had progressed in this field. During the reign of Siddharaj Jaysingh many artisans (weavers) came and settled in Patan. The Patolas of Patan became world famous, due to their skills. This art of Patan is more than 850 years old. Only handful of artisans have the skill for such a complicated and time consuming art. The silk ware (Bevad Ikt) produced in Patan is called Patola of Patan. Ikt means weaving. This type of saree is designed in such a manner that it can be worn on either side. This type of patola variety has a good durability and its original colours remain intact. There is a saying in the same reference. - ‘પડી પડોળે ભાત, ફાટે પણ ફીટે નહિ’. - The design laid down in Patola shall never fade even if the cloth may be torn.

Art of Embroidery :

The work of embroidery can be seen on the clothes of the idols and statues which were found during the excavation of Harappa and Mohan-Jo-Daro. The art of weaving on the clothes of men, women and children is very famous from ancient time. This art of embroidery, was seen on the clothes of men, women and children in Sindh, Saurashtra and Kutch region at the time of the Indus civilization. Similarly, Kashmiri (kasab) work of Kashmir is also well-known.

Apart from embroidery, Bandhani of Jamnagar, Jetpur, Bhuj and Mandvi of Gujarat are very popular. The traditional style of Bandhani with all its luster and due to the beautiful designs of elephant, puppet, dice and pitcher is very popular today. Cottage industry was taken over by the women of Kutch and

Saurashtra regions of Gujarat. The traditional art of embroidery, torans, chakda, pillow cover, bed sheets, shakh, todaliya, clothes like kediyā is well-known even today. Embroidery work is also carried out on quilt and shawls with different designs. Embroidery work of 'Jat' community of Banni area of Kutch is unique in itself.

Leather Industry :

Skin of dead animals was used for various purposes in ancient India. After the death of animal its skin was processed in a traditional manner. Leather was prominently used for making 'Masak' (a leather bag for fetching water) and kos, drum, dholak, tabla (musical instruments) and the bellows used by blacksmiths and various types of footwear, leather belts to tie animals etc. Leather was also used to prepare shield which was used during wars.

Leather industry had a Prominent place in ancient India. Well-knitted Mojadi of Rajasthan, shoes, leather knitted purses, belts and other things made out of the leather for horse and camel like saaj, palan, lagaam and whip were very much in use.

Diamond - Bead work and enamel work :

India has 7517 km. long coastline surrounding all three directions : East, West and South. So, diamonds and beads are available in plenty. There has been a wide use of gems and diamonds since ancient times. Since ancient time, trade of diamond and beads was carried out through sea routes with different countries across the sea. Diamond studded ornaments have been in a great demand in foreign countries since long. The world famous diamonds like 'Kohinoor' and 'Great Mughal' were found from India only. As Indians are fond of diamond and beaded ornaments, variety is found in great deal. Earlier rich and royal people used to wear diamond jewellery apart from gold ornaments.

Diamonds, rubies, beads, emerald and topaz were used to adorn and beautify the thrones and crowns and jewellery like bracelet and garland etc. of kings. Bead work is also found prominent in Gujarat. The beautiful bead 'Torans pachhit, pots, Bari (door grills - frames) 'chakda' (a traditional wall piece), decorative coconut used at the time of ceremonies (Lagna na nariyel) 'Indhoni', 'Modiya' (a net which covers the mouth of a bullock, horns) handfans, animal back cover (Jhool) etc. are knitted in a unique artistic way.

India has been a leading country in jewellery, since time immemorial. India is the only country in the world where expertise can be seen in enamel work, apart from the gold and silver work. Enamel work means the artistic skill of inlaying the bright colours like red, green and blue in the gold silver ornaments like rings, bangles, earrings, key chain, chain etc. Experts of enamel work are seen especially in Jaipur, Delhi, Lucknow, Varanasi and Hyderabad.

Jari work :

Jari work is seen in India since ancient time. Golden and silver threads are woven with clothes and embroidery is done with gold and silver threads to decorate the clothes. Surat is a prominent place for jari work. Knitting and embroidery of Jardoshi work, have a unique beauty. Even artisans of Surat could make beautiful dresses like saree, panetar, gharchola etc. bordered with Jari if needed.

Metal Work : (Engraving)

Metal work is also a very old form of an art of India. Metal age began and developed after stone age. The artisans of Lothal made different weapons like sickle, drill (curved saw) and needle etc. with copper and bronze. Moreover, they prepared utensils, idols and pots. Arms and ammunition for wars were made up of metal. Gold and silver were used for making ornaments, copper, brass and bronze were used to make utensils and idols whereas iron was used to make instruments and weapons.

Wooden Art :

Man, trees and forests are closely associated with each other. Initially wood was used as a fire wood, later on for making weapons, construction of buildings and other construction work. Gradually wood was used for different purposes like for making idols, toys for children, wooden pillars, windows and doors, small huts on top of the terrace, thrones, chairs and grills. In this way, wood carving was developed. Wooden furniture like swings and toys of Idar and Sankheda in Gujarat are well-known.

Inlay Work :

Inlay work is considered to be very ancient art of India. Indian kings, emperors, rulers and royal people of that time used to wear ornaments as necklace, bracelet, crown, ring, nose ring, Damni (Tiko) etc. were studded with precious gems like diamonds, pearls, rubies etc. Artisans were experts in the work of inlay art. Bikaner area of Rajasthan is more popular for inlay ornaments.

Akik Work :

Akik is a kind of precious stone, especially found in valley areas of the river. It is chiefly chalcedonic mixed with silica blue or white stone. Carnelian is main stone with semi-transparent quality and beautiful red in colour. In Gujarat various precious stones are available in big and small size at Ranpur and Surat. All these stones are sent to Khambhat to mould into various beautiful ornaments with various designs. Beads and garland of stones are prepared by them.

Painting :

Of all the arts, painting is the foremost one. Painting is an art which can be expressed through lines and colours. The aim of this art is to express emotions by imitating the animate and inanimate objects of nature through lines and colours. We have evidence of Indian art of painting from the remains of 5000 years old Harappan culture. Various models of painting have been found out many times by the archaeological Department during excavation work. We have traces of the pictures of animals and birds in the cave painting of primitive man of Stone age at Bhimbetka (M.P.). People used to draw geometrical designs and sketches. Elephant, Rhinoceros, Deer are notable among them. Ajanta - Ellora are incomparable specimens of such paintings. Drawing the sketches of swastik, Pitcher, Ganesha at the time of festivals and celebration is an old tradition of India. Rangoli making is also a very old tradition in some of the regions of India.



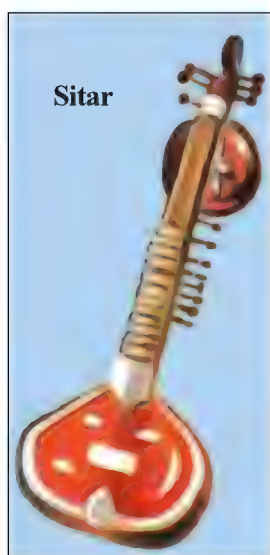
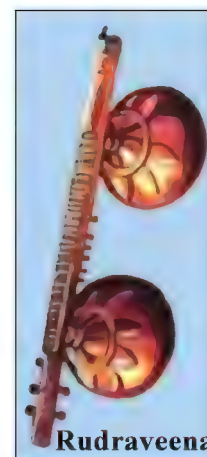
2.2 Padma-Pani Ajanta

Fine Arts of India :

Singing, playing, dancing and performing roles of different characters is a unique feature of Indian culture. Entertainment with moral education has been imparted since ancient times through dramas based on the greatest scriptures like Ramayana and Mahabharata.

Music :

Indian music is unique in the world from the point of view of tune, rhythm and harmony and so it is different from the music of other countries of the world. Samveda, one out of the four vedas, is considered to be associated with music. Richas of Samveda are sung with tune and rhythm of music. Music involves both singing and playing. SA, RE, GA, MA, PA, DHA, NI are the seven vowels of music. Indian music can be divided mainly into two parts : classical music and folks music. We have five main ragas in classical music. (1) Shree (2) Deepak (3) Hindol (4) Megh (5) Bhairavi. It is believed that all these ragas naturally came out of the Panchmukh of Lord Shiva. In ancient India many texts were written on music out of which the introduction of three : Sangeet Makarand, Sangeet Ratnakar and Sangeet Parijat is given below.



2.3 Musical Instruments

Sangeet Ratnakar as the most authentic book on music. 'Sangeet Ratnakar' is believed to be unique in understanding all the aspects of music.

(3) Sangeet Parijat : 'Sangeet Parijat' is a very important book on music. Pandit Ahobale had written this text in 1665, on Northern Hindustani music. He had noted one important characteristic feature of all the ragas saying that the ragas have their own individual identity and characteristic. He has described 29 types of tunes.

During the time of Allauddin Khilaji, talented Amir Khushroo was very famous. Due to his contribution in the field of music and poetry, he was known as Tuti-e-Hind (Parrot of India) in Indian history. Bhakti movement started in India in 15th and 16th century. Bhakti sangeet of Chaitanya Mahaprabhu, Kabir, Tulsidas, Mirabai and Narsinh Mehta etc. was very famous. The disciples of Swami Haridas, Baiju Bavra (Bajinath), Tansen and duet girl - Tana-Riri are considered as rare jewels of music of 15th century.

(1) Sangeet Makarand : A music scholar Narad who had written Sangeet Makarand in about 900 BC. It describes 19 veenas and 101 rhythm which are useful even today.

(2) Sangeet Ratnakar : The writer of this text was Pandit Sarangdev. He lived in Daulatabad (Devagiri) so he was familiar with South and North Indian music. Pandit Vishnu Narayan Bhatkhande considers



Art of Dance :

The word 'Nritya' has been derived from the original Sanskrit word 'Nrit'. Dance is one of the mediums of realizing beauty, with 'Taal' and laya (rhythm and harmony) for the realisation of aesthetic joy. Shiva, the originator of dance is the lord of Dance. Shiva is therefore also said to be 'Nataraj'. He was the first to bring down music from the heaven to the earth to teach this art of dance to the people. India has wide variety of traditional classical dances - Bharatnatyam, Kuchipudi, Kathak, Kathakali, Odissi, and Manipuri.

2.4 The God of Dance : Nataraj

Bharatnatyam :

The origin of Bharatnatyam is believed to be Tanjor, a district in Tamilnadu. There are two books - 'Natyasashtra' by Bharatmuni and 'Abhinav Darpan' by Nandikeshwar, which are the original sources of Bharatnatyam. Apart from Gopi Krishna and Mrinalini Sarabhai, the actresses like Vajranti Mala and Hema Malini etc. are considered to be the preservers of this heritage.



2.5 Art of Bharatnatyam

Kuchipudi :

This style of dance was created in 15th century. It is mostly based on the description of women's beauty. Different poses and gestures performed by male and female dancers are woven in the foundation of this dance. Kuchipudi is famous in Andhrapradesh. Guru Prahlad Sharma, Raja Reddy, Shobha Naidu etc. are the well-known dancers who have preserved this ancient tradition.

Kathakali :

This style of dance is very famous in Kerala. The word Kathakali has been derived from the dramas based on ancient epics-Ramayana and Mahabharata and mixed dramas of Sanskrit and Malayalam. The characters of this art wear beautiful plaited attires. We have to read their facial expression to recognise the characteristics of the character. The crown they put on is very artistic. The character performs his/her dance with facial expressions and poses of hands to introduce the characters of 'Trilok', they come in front of the curtain with the light of earthen lamp only. Poet of Kerala Shri Vallathod (founded Kalamandal Kathakali) Kalamandalam, Krishnaprasad and Shivaraman etc. have earned great fame in the nation and world wide.

Kathak Dance :

The line 'Kathan kare so Kathak kahave' is related to the Kathak dance. The Kathak dance narrates the life events and incidences of Lord Krishna. It is observed that it has developed with 'Shrungar Bhakti'

of Vaishnav community. In this style of dance, dancer turns around on one leg and shows references of dance. Women wear narrow trousers and frilled (frock) attire. This style of dance has been kept alive by

Pandit Shri Birju Maharaj, Sitara Devi, Kumudini Lakhia etc.



2.6 Manipuri Dance style

time silk blouse and a belt are put on around the waist. Guru Amobisingh, Atomboosingh, Guru Bipin Sinha, Nayna Zaveri, Nirmal Mehta etc. have gained worldwide fame.

Manipuri Dance :

The people of Manipur dance on every occasion and festival. This dance style is chiefly based on Rasalilas and Bal Lila of Shri Krishna. Manipuri dance is divided into two types : Lasya and Tandav. The plaited green coloured petticoat is known as 'Kumin' and at the same

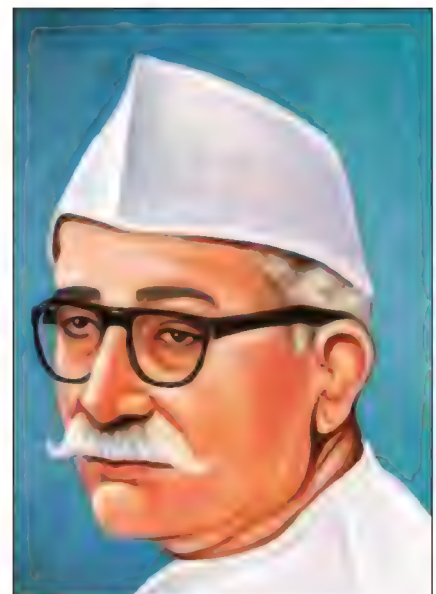
Dramatic Art :

Presenting sanskar with entertainment is the unique feature of Indian dramatic art. Apart from this anchor and funny pair of clowns entertain audience. 'Natyashastra' by Bharatmuni is well-known in the field of art. Dramatic art, writing of drama and performance of drama along with audio-visual aids, this trio holds the capacity to entertain the people of all age group. Dramatic art is an amalgamation of all the arts. Describing it Bharatmuni says, "There is no book, there is no sculpture, there is no knowledge, there is no deed which is lacking in dramatic art". The first drama of Bharatmuni was 'Devasur Sangram' In Sanskrit literature, we have various well renowned dramatists. Bhas is the poet of poets among them. He has bequeathed us dramas like 'Karnabhar', 'Urubhanga', 'Dutvakya' based on Mahabharata. Whereas Kalidas the foremost poet gifted us plays like 'Abhigyan Shakuntalam. Vikramorvashiyam and Malvikagnimitram. Apart from above, many dramatists came and enriched the dramatic art of Sanskrit literature.

The name of 'Jayshankar Sundari' is foremost in the dramatic art of Gujarati. Besides Amrut Nayak, Bapulal Nayak, Dina Pathak, Jashwant Thakar, Upendra Trivedi, Pravin Joshi, Deepak Gheewala etc. are remarkable playwright. There is a greater contribution of regional and other drama institutions in this field.

Bhavai :

Script writers have said that 'Bhavai' is emotion oriented drama. It is special dramatic art that started 700 years ago by Asait Thakar. This art which has been providing public education along with entertainment at the economical rate, promoted during Solanki Era. It was chiefly performed without curtains, with light humour and with the music playing on trumpet. Characters disguised in the form of Ramdev, Jhanda Jhulan, Kajoda etc. are the main features of Bhavai. Theme of Bhavai includes protest against social vices. The characters



2.7 Jayshankar Sundari

like Rangla-Rangli are used to promote the programme like girls' education, save the girl-child etc. Those who perform this Bhavai play trumpet and pray to the Goddess by reciting hymn.

Folk Dances of Gujarat :

There are varied dance forms belonging to different communities of Gujarat. These dance forms are according to the traditions and customs. Among them are tribal and folk dances, garba, rasa and many more folk dances. Such art of dance can be seen at the time of festivals, marriages and fairs.

Tribal Dance :

Tribal dance of Gujarat is seen at the time of festivals, marriages, fairs and to please the God-Goodesses. Most of dances are performed by forming a circle along with various traditional musical



instruments like drum, traditional manjira, thali, dholak with songs in regional language. In the dance form known as chado, characters imitate different bird creatures like peacock, squirrel and Sparrow. Dance like - 'Mali No Chaalo' and 'Thakryo Chaalo', are seen in Dang. Whereas 'Tippani Dance' of labourers (Shramhari) performed by Bhil and Koli communities Dancers perform dance in group on the set of thick sticks which are joined with small sticks stuck to the ground.

2.8 Tribal Dance

Garba :

The word Garba is derived from the word 'Garbh deep'. Earthen lamp is placed in a holed earthen pot Dancers keep it on their head and move around in circle Garbas are performed during navratri festival (In Hindu month - Aso Sud Ekam to Aso Sud Navmi or somewhere upto Dasam or on Sharad Poonam) in all part of Gujarat. Gujarati people perform and sing garba to worship and pray Adhya Shakti (Goddess of power) mother Jagdamba. Generally, it is performed in the open ground encircling to the Mandvi' kept in the centre of the ground along with the strokes of hands and beats of drums.

Gujarati poetry known as Garba and Garbi are chiefly associated with Krishna Bhakti. Gujarati poet Dayaram wrote poems in Gujarati which masde ladies sing the colourful and emotional garbi of Lord krishna's love.

Rasa :

Rasa is a dance to be performed in circle along with singing. There is a story that Lord Krishna had shown 'Rasa Lila' to devotee (Bhakt) Narsinh Mehta. Rasa is mostly performed in Gujarat during navratri

and Janmashtami festivals. Dandiya Rasa is one of its types. But some people perform rasa by placing earthen pot on the head. Due to increasing influence of Vaishnav sect, rasa has become more popular. Women wear traditional dresses like embroidered chaniya-choli and men wear embroidered kediya-dhoti when they perform (play) rasa.

Other Dances of Gujarat :

(1) Gof Gunthan Dance : It is performed on drumbeats and taal and laya of music, tying rope with mandapa, pillar, tree and holding the other end in the hand. They perform dance in group holding the rope in one hand and dandiya in other. They make crisper like formation, going one inside and other coming outside. This is repeatedly done forming a circle. This way they make and open the Gunthan (plait). This style of dance is called Gof Gunthan dance.

(2) Dhamaal dance of Siddhis : Siddhis, presently residing in Jambur village, in the center of Gir, originally belonged to Africa, performs this dance. They perform dance by rhythmically striking Mashira (coconut shell containing earthen lamp inside, covered with a cloth), wearing peacock feathers and holding small drums in hands forming a circle. They dance with high and low pitch intonation of 'Ho-Ho' sound which echoes in the whole forest. They dance in a group imitating the voice of animals and birds.

(3) Merayo Dance, Padhar Dance and Kali and Mer dance : This type of dance is seen near the stepwell of Banaskantha region. Toran is woven with the tall grass of reed and Jhunjhadi. This dance is performed on drumbeats and sword tricks. This type of dance is called Merayo dance.

In Surendranagar region, the people of Padhaar community dance with taal and laya of dandiya and manjira. While dancing they generate scenes like sea waves or like a ship moving on sea waves.

Kolis of Saurashtra perform kolidance, holding madhrasio on head and head gear (turban) decorated with embroidery and mirrors tied with green coloured embroidered belt. They wear 'Bhet' on their waist to perform dance. Similarly Mer dance of Saurashtra and other dances of Bharwad tribe are wellknown.

As we discussed in the previous chapter, here also we find that Indian culture is universal assimilating all. As a result of arrival of various tribes, since ancient time to contemporary one, many changes occurred like growth and development of handicraft, home artistry, painting, dancing and various other fine arts. This shows rich and varied heritage of India and it leaves permanent impression of India on the horizon of world.

Excercise

1. Answer the following questions in detail :

- (1) Explain clay work of ancient Indian heritage.
- (2) 'Leather work is a very old art of India.' Explain the statement.
- (3) Give introduction of 'Sangeet Ratnakar'.
- (4) Give information about Kathakali dance.

2. Write answers of the following questions pointwise :

- (1) Explain the progress of Dancing Art in India.
- (2) Give information about Garba and Garbi of Gujarat.
- (3) Describe the art of Diamond, Bead work and Enamel work of India and Gujarat.
- (4) Describe tribal dances of Gujarat.

3. Answer the following questions in brief :

- (1) Name the writers of 'Sangeet Ratnakar' and 'Sangeet Parijat'.
- (2) What is the process followed in spinning ?
- (3) Name the items of metal prepared by the artisans of Lothal.
- (4) Which designs did artisans make on clay utensils ?
- (5) Write a short note on 'Bhavai'.

4. Answer the following questions choosing the correct option from those given below :

- (1) Which of the following is a work of Kalidas ?
(A) Urubhanga (B) Karnabhar (C) Meghdoot (D) Dutvakhyam
- (2) With which dance style are Vijayanti Mala and Hema Malini associated ?
(A) Manipuri (B) Kuchipudi (C) Kathakali (D) Bharatnatyam
- (3) Which veda is associated with music ?
(A) Rigveda (B) Samveda (C) Yajurveda (D) Athrvaveda
- (4) Who is known as Tuti-e-Hind in the field of Indian music ?
(A) Tansen (B) Tulsidas (C) Kabir (D) Amir Khusroo
- (5) 'Chhaddo' dance means which dance ?
(A) Tribal Dance (B) Dance of Bharvaad (C) Dance of Kolis (D) Dance of Padharaas
- (6) Siddhis, the dancer of Dhamaal dance were native of
(A) Rajasthan (B) Andaman (C) Africa (D) Thailand
- (7) On which day is the "World Yoga Day" celebrated ?
(A) 21 June (B) 1 May (C) 21 April (D) 5 September

Activity

- Take students to Ajanta-Ellora.
- Show videos of various dances to the students.
- Take students to Government owned handloom corporation.
- Visit the 'Handicraft Fair' organized in your locality and observe the products.



3

Cultural Heritage of India : Sculpture and Architecture

India is world famous for its rich cultural heritage. The art of sculpture and architecture has brought a unique identity to India. Town planning of Indus culture of ancient India was greater than contemporary town planning of the world and it is very remarkable. Sculpture means to carve the feelings on stone, wood or on metal with hammer and chisel.

Sculpture

The art of shaping figures or design with facial expression in round or in relief professionally performed by a sculpture with the help of chisel and hammer is known as sculpture.

Architecture

Simple meaning of architecture means art of construction. The word 'vastu' is used for architecture in Sanskrit language and it is very much renowned. In this reference art of constructing buildings, houses, towns, wells, forts, minarets, temples, mosque and tombs is called architecture. Skill of architect is seen in the art of his architecture.

Ancient Indian Town Planning

India has acquired expertise in the field of town planning. Many such towns have been found out during archaeological excavation work. The towns were divided into three sections : (1) Fort of rulers (Citadel) (2) Houses of administrative officers situated on the upper part of town (3) Residences of common people situated on the lower part of town.



3.1 Town planning of Mohan-Jo-Daro

- Forts for rulers were constructed on the upper part of the town.
- Upper part of the town is safe and protected with houses having two to five rooms.
- Houses on the lower part of the town are mainly constructed with hand made bricks.

People of Indus valley civilization has developed many more beautiful and systematic towns than many other civilizations of the world from the architectural point of view. Among all of them Harappa and Mohan-Jo-Daro had the best town planning.

(1) **Mohan-Jo-Daro** : In 1922, archaeologists named Rakhal Das Banerji and Dayaram Sahni found out remains of huge town planning, during excavation work which was being carried out under the guidance of sir John Marshal and Colonel Meke, in Larkhan district, (Now in Pakistan) of Mohan-Jo-Daro. Mohan-Jo-Daro means 'the heap of the deads.'

(1) Construction of Town : (Municipal composition) From the point of view of town planning, Mohan-Jo-Daro is the best. Houses were built on high plinth to protect them from floods and dampness. The houses of the rich people were double storeyed having five to seven rooms, while those of poor people

were single storeyed having two to three rooms. The town was fortified. The main entrance of the houses opened on the side lanes and not on the main roads. Remains of store house, kitchen and bathroom were found in every house. There was proper arrangement of doors and windows to keep the houses airy and ventilated.

(2) Roads : Roads are the main features of this town planning. The roads were 9.75 metres wide. The small link roads crossed the major ones at right angles. The roads were wide enough for a number of vehicles to pass at a time. Pits on the road side suggest that there might have been lamp posts. Roads of town were straight main roads without any turns. This is considered to be a speciality of ancient time. There were two main roads. One was going from north to south and the other was going from East to West. Both crossed each other at right angle.

(3) Drainage System : Drainage system is a unique feature of this town planning. Such a drainage system was found nowhere except the in island of Crete in the Mediterranean sea. This system was built to drain dirty water out from the town. Each and every house had a cesspit. This planned, systematic and efficient drainage system clearly proves that they were very careful about their health and hygiene.

(4) Public Baths : A huge bath was excavated at Mohan-Jo-Daro. There was an arrangement to put fresh water in and dirty water out. There might have been facility for hot water and small rooms for changing the clothes. These public baths might have been used on festivals and religious ceremonies.

(5) Public Buildings : The ruins of two huge buildings have been found at Mohan-Jo-Daro. They might have been used as a town hall or as a theatre or an administrative office or a granary. The barrack of such buildings was also found out. This must have been used to accommodate soldiers.

(2) Harappa : In 1921, under the leadership of Sir John Marshal and Colonel Meke, Dayaram Sahni discovered very ancient remains of Indian civilization from Montegomary in Punjab district near Harappa. The remains of Indus valley civilization were found from Rapar in Himalayan region, Alamgirpur at Meerut in Uttar Pradesh, Kalibangan in Rajasthan, Lothal at Dholka in Gujarat, Deshalpur - Shikarpur in Kutch, Dholavira, Rangpur near Limbdi in Saurashtra, Shrinathgad (Rozadi) near Gondal, Kuntasi near Morbi and Somnath etc.

The region of Saptasindhu river is a region of our Indian culture. The culture which developed here is known as Indus valley civilization. Its remains were found first of all from Harappa that is why it is known as Harappan civilization. Copper and stone weapons and many other things were found from this region. That is why it is also known as copper stone age. Town planning of Harappa civilization was very systematic. Its granaries and forts were remarkable. People of that age were fond of wearing ornaments and such remains have been found.

(3) Dholaveera : A huge and systematic ancient town, contemporary to Harappan civilization has been found 2 km away from Dholaveera village at Khadirbet, in vast desert of Bhachau taluka which is about 140 km. away from Bhuj. Archaeological department of Gujarat surveyed this heap of ruins. After this officers of Archaeological survey of India had undertaken the research work in 1990 A. D. Special task of excavation was carried out under the guidance of Ravindra singh Bisht.

Remains at Dholaveera, palaces and main walls of town were painted with white colour. Such fortified walls encircling town suggest strong security. This wall is made up of clay, stone and



3.2 Dholaveera

bricks. potable water was available here as well as a proper system of water purification was set up here which is not made available to all even in modern age.

(4) Lothal : Lothal is situated in Dholka taluka of Ahmedabad district. Dholka is a place between two rivers. Bhogavo and Sabarmati. It is 18 km far from Bay of Khambhat, from where three layers of human habitat were found. A huge dockyard was constructed to facilitate ships in the time of high tides at the lower eastern part of the town. And this is a unique feature of Lothal. Such dockyard, storage shops etc. show the proof of exports and imports. This suggests that Lothal might be a rich and prosperous port of India. This is a matter of great pride not only for Gujarat but also for history of India.



3.3 Lothal

Mauryan Art :

Stupa : An oval shaped construction under which the remains of Lord Buddha's body were kept in a box is known as Stupa. There are five famous stupas of king Ashoka's time : (1) Stupa of Sanchi (2) Stupa of Sarnath (3) Stupa of Berat (4) Stupa of Nandangadh (5) Stupa of Devanimori in Gujarat. Besides, Chaityas, Viharas and Maths were constructed. The period of king Ashoka was the golden period of prosperity for buddhist religion and age of sculpture and architecture.

Buddhist religion has gifted caves, viharas, chaityas and stupas to the field of architecture.

Stupa of Sanchi : The Sanchi stupa was built during Mauryan Period. It is situated at Madhya Pradesh. The original stupa of Sanchi was made of bricks. It was half in size compared to the present stupa. This buddhist stupa is precious specimen of art of architecture.



3.4 Stupa of Sanchi

Linear Sketch of stupa

Harmika

The railing around the top of the oval shaped stupa is called Harmika.

Medhi

Elevated circular path around stupa is known as medhi, which is used for pradakshina.

Pradakshina Path

A slightly elevated circular path around the temple or place of worship is called pradakshina path. Pradkshina is done in such a way that place of worship is always to the right side.

Toran

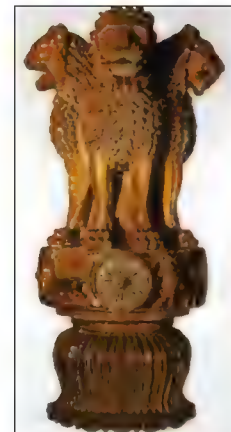
Toran means a gate way that is built on two high pillars with artistic horizontal beam on it. The devotees use this toran as an entrance.

Pillar Inscription

Stone inscriptions were made from single rock. Stone inscriptions carved out by the religious order of emperor Ashoka are the best specimen of engraving on stone. They were polished so well that they gleamed (shined). Such pillars were erected in Ambala, Meerut, Allahabad, Sarnath, Loria near Nandangadh, Sanchi, Kashi, Patna and Bodhivruksha near Bodh-Gaya. They were carved in Brahmi Script.

Pillar at Sarnath

The stone inscription at Sarnath is the best specimen of sculpture. The pillar has four lions facing four directions. Sarnath preaching place of Lord Buddha, Dharmachakras are carved below the lion images. This chakra indicates triumph of religion. That is why it is called Dharmachakra. Apart from this, it has sculpture of elephant, horse and bullock. This chakra has been placed in the national flag of Republic India. Images of four lions have been placed as our national emblem. This is considered to be one of the best specimens of sculpture in the world.



3.5 Lion Image at Sarnath

Stone Inscription

Stone incriptions carved by religious orders of emperor Ashoka are the best specimens of engraving on stone. Wooden art, stone sculpting show an excellent specimen of art of architecture. along with erections of pillars of wood and stone beautiful arches are engraved on the door, which stresses religious behaviour. Such stone inscriptions have been found from Peshawar, Dehradun, Thane, Mumbai, Dhauli, Jaugada (Odisha) and Chennai etc. Such type of stone inscription has been found from the foot hill of Girnar mountain on the way to Junagadh in Gujarat. Other than this, Palitana Jain temples on Shetrunjay mountain in Gujarat, Jain temple (1847 A.D.) of Hathisinh in Ahmedabad are such stone inscriptions which provide complete information in Sanskrit and Gujarati languages.

Dravid Style of Art in South India

Many buddhist Stupas were built in the regions near Krishna and Godavari river during the reign of Satvahan kings. They were of semi-circle, oval and bell shaped. Stupa in Nagarjuna-kaunda and Amravati are the best specimen of Dravid style of art. Chola kings adopted Dravid style of architecture up to the great extent..

Art of Gupta Period :

During the Gupta period, architecture, sculpture, painting, dancing and music flourished. Parvati temple at Jabalpur (Ninava), Bhumara (Nagoda) Shiva temple, Eran's (Madhya Pradesh) Narsinh temple, Gopmandir at Jamnagar, Stupas, Chaityas, Maths, Viharas, Flags and Pillars are the unique examples of Gupta art. Gupta period is known as the golden period of art. Buddha statue at Sarnath, statue of Lord Vishnu at Mathura, Statue of Mahavir Swami, caves of Udaya giri and statue of Vishnu in the form of Varah etc. are the best specimens of sculpture of Gupta period.

Cave Architecture

Cave architecture is considered as a manmade place of beauty. Caves of Ajanta and Ellora at Aurangabad, Elephanta caves near Mumbai, Udayagiri and Bagh near Gwalior, Bhuvneshwari near Odisha, Khandgiri and Nilgiri are the famous specimens of cave architecture of Gupta period. Khambhalida (Gondal) in Gujarat, Dhank (Rajkot), three Caves at Junagadh, Talaja, Sana etc. Caves are also found. The cave inscriptions of Ashoka have been carved on the walls of three caves of Berber moountain, 16 km. away from Gaya. This describes works of charity done by Ashoka. Caves of Assam and Darjiling, Sudama cave of Bihar and cave of Seeta are the well-known cave architecture.

Detail information of Ajanta - Ellora caves is given in chapter 6.

Caves of Gujarat :

(1) Caves at Janagadh : There are three groups of caves in Junagadh.

(1) Group of Bavapyara caves : This cave is situated near Bavapyara math. They are in three layers intersecting each other at right angles. There are total 16 caves, out of them four are in first line, seven in second line and five in third line. Possibly they were carved during first and second century A. D.

(2) They are double storyed. On seeing their remain say one can that they might have been carved during the end of second century and the beginning of fourth century.

(3) Caves of Khapra and Kediya : Caves of Kund : On seaing the remains, it can be said that they were floored caves. It might have been carved in the third century. There are twenty pillars and they are in ruins now.

(2) Khambhalida Cave : It is discovered in 1959 A. D. They are situated at Khambhalida near Gondal, 70 km. from Rajkot. Three of them are remarkable. Chaitya Gruh with stupa is situated in the middle cave. Figures of Boddhi sattvas and statues of devotees are standing on both the side of enterance path supported by trees. And they are of second or third century.

(3) Talaja Cave : Mountain of Talaja is situated near the mouth of Setrunji river in Bhavnagar district. It is famous as piligrim of Taaldhwajgiri. Thirty caves have been carved from stones with huge gates. Ebhal Mandap (Sabhakhand) and Chaitya Gruh are the best examples from sculpture and protection point of

view. Cave architecture of Buddhist religion belongs to the third century A. D.

(4) Sana Cave : This group of caves is situated on the top of Sana mountain in Vankiya village, Una taluka in Gir Somnath district. These caves are spread on Sana mountain like bee-hive.

(5) Dhank cave : Dhank giri is situated in Dhank village of Upleta taluka at Rajkot district. It is considered that they might have been built in the beginning of fourth century.

(6) Jhinjhuri Jhar : There are many buddhist caves in the west of Dhank, about 7 km from Siddhsar, is the valley of Jhinjharijhar. It is considered that they have been built in the second century.

(7) Khapra - Kodiya caves at Kachchh : These caves are situated on the top of mountain near old Paat gadh, in Lakhpat taluka of Kachchh. There are two caves, these are discovered by K. K. Shastri in 1967 A.D.

(8) Caves at Kaliya Dungar : There are three caves in Kaliya Dungar at Jhagadiya taluka in Bharuch district. These are the best old architected specimens of buddhist religion. Architecture of these caves is marvelous. An eleven feet high statue of a lion with two bodies and one mouth in the form of pillar has been carved which in a single rock.

Chariot Temple

A unique feature of Pallava age can be seen in the famous chariot temple of South India, which is carved out from a single rock. Kailashnath temple of Kanchi and temple of Vaikuntha Perumal are the best examples of architectural art. Apart from above, Mandapas at Mahabalipuram and chariot temple of Mahabalipuram are world famous. Each one of them is rock cut temple. These chariots are named after the names of Pandavas. Chariot temple of Dharmaraja is the biggest one where as the chariot temple of Dhraupadi is the smallest.

Temple Architecture :

Many famous temple architecture are seen with high pedestal and pinnacle with ladder. But some are flat with pradakshina path encircling the 'Garbha Gruha' (inner most part of the temple). The Bhoomara shiva temple near Jabalpur and temples of Larkhan in Bijapur district, copper statue of Lord Buddha in Nalanda (Sultangunj) and Jain temples of Mathura are unique specimens of archite-

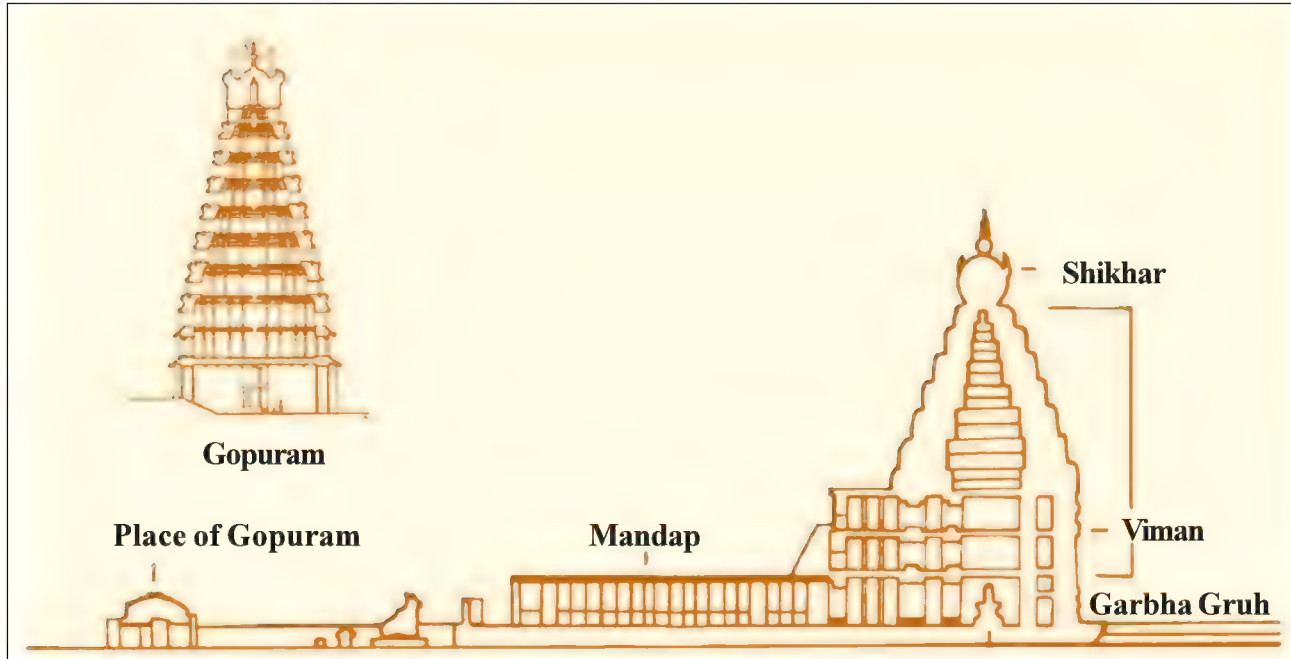


3.6 Chariot Temple

cture and sculpture. There is a greater contribution of Pallava kings. Temples constructed in Kanchi, the capital city of Pallavas are very famous. Tanjavar was the capital of the Chola Dynasty. The great Brahadeshwar temple was the first temple constructed by Rajraja of Chola dynasty. It is about 200 metres high. It is an extra-ordinary temple of ancient India.

Architecture of Gopuram :

Gopuram means entrance of the temple. The construction of temples gained momentum due to the encouragement of Pandya rulers of South India. They built high outer walls and beautifully decorated gates outside the temple. The gates of this temple are known as 'Gopuram'. The artistic glory of Gopuram has become more popular than its temples. Gopuram of Kanchi and Madurai gives us aesthetic pleasure even today when viewed from distance.



3.7 Architecture of Gopuram

Linear Sketch of Temple

Garbha Gruh :

Garbha Gruh means a small and dark rectangular room in which idol is kept. In Gujarat, it is known as 'Gabharo'.

Gopuram

Gopuram means a gateway of a Southern Indian temple. Two lower storeys of temples are convex shaped and the other two storeys are aloft to make a pyramidal structure that makes the Gopuram strong.

Mandap :

It is a big hall constructed on the pillar or is a huge area lying in the front of the main gate.

Pinnacle (Shikhar) :

The pointed exterior part of Garbh Gruh at the top is known as pinnacle. It is plated either with gold or brass.

Viman :

Viman is a part of temple. It is semi-circle or in sloping shape. It has many storeys and looks like pyramid.

The Sun temple of Konark is in Odisha, which is one of the forms of chariot temple. Brahadeshwar temple of Tanjavur has thirteen storeyed 'Gopuram'. Metallic and stone idols of this age have special characteristic features. Bronze statue of Natraj is the best example of idol sculpting of that time. Chola temples have their own splendor in age in the field of art and architecture.



3.8 Sun Temple of Konark

Jain Temples : (Derasar)

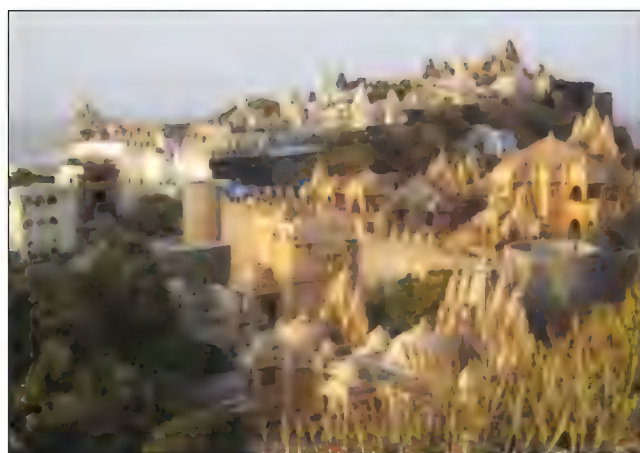
Jain temples are found at various places of India. Vaibhar at Rajgruha, Vipulachal, Ratnagiri, Udayagiri and Shramgiri are five Jain temples. There is a Siddhakshetra Pilgrim in Samet Shikharji, Bihar and it is known as Madhuvan. Aadinath Bhagwan and other 20 Tirthankars attained Nirvana. There are temples of Abhinandan Nathji and Parshwa Nathji. Bhagwan Mahavir reached here and many sages attained salvation (Moksha). There is a Jain temple at Palitana and Shankheshwar temple at Panchasara in Gujarat. Jain temple at Delwara (Mount Abu) and Ranakpur in Rajasthan are excellent and wonderful form of construction carving, artistic skill and sculpture point of view. Especially Delwara temples of Abu which have been constructed by minister Vimal shah are 'Vimal vasahi' and other minister Vastupal constructed 'Luna Vasahi' are excellent example of sculpture. These are constructed with white marble. They are famous in India as well as abroad because of their attractive minute and artistic work of sculpture. These temples are wonderful and memorable gifts of Jain religion to the Indian culture. Jain temples are worldwide famous due to their art of sculpture and architecture.

Sun Temple of Modhera : Modhera temple in Gujarat (Mahesana District) was built in 1026 A.D. during the reign of Solanki King Bhimdev-1. In this temple, a gem was studded in the middle of the crown of Sun God. The entrance gate on the Eastern side of this temple is constructed in such a way that the first ray of Sun falls directly on the gem and because of it, the entire sanctum is lit up, creating a divine atmosphere. Twelve different images of Sun God and erotic sculptures are seen in this temple. The carving of this temple is done in Iranian school of Art. There are 108 small temples surrounding the outside tank which creates a pleasant sight at dusk and dawn.

Medieval Architecture

(1) The architecture of mosques, minarets, royal palaces, bridges and inns etc. are seen in medieval age. Qutub-ud-din Aibak built Qutubminar and Quwwat-ul-Islam mosque. Similar mosque named

Meenakshi, one of the huge temples of India is in Madurai spread in vast area. It has four main 'Gopurams' from the architectural point of view. It is a wonderful temple. In the medieval period, Khajuraho was the capital city of Chandela ruler of Bundelkhand. Chandela rulers built a beautiful temple at Khajuraho. The style of pinnacle varies from others. Khajuraho temples are the finest temples.



3.9 Palitana

Adhai-Din-ka Jhopara was built by Qutub-ud-din Aibak, in Ajmer.

- (2) **Bengal** : Adina Mosque at Pandua region of Bengal, Tomb of Jalal-ud-Muhammad shah and Tantipara mosque were constructed. This region developed its own special style in the field of architecture.
- (3) **Jaunpur** : Sultans of Turkey built Atala Mosque. There is an artistic grill around the dome. The walls and ceilings are decorated with many Indian designs including lotus.
- (4) **Malwa** : Peculiar style of Mandu buildings is seen under the protection of Sultans. Many such tombs have been created over there. The huge and impressive domes and carving of balcony in this structure are attractive. Tomb of Hoshang shah is completely made of marble in Indian style.
- (5) **Other Provinces** : Besides this, the rulers of Kashmir and Bahmani built dome of Bijapur, buildings at Bidar and Gulbargani and 'Madrassa' of Mahmud Gava, temples of Hampi Vithala Swami and Hazar Rama, Gopurams and artistic Pillars are well-known art of Vijaynagar Empire.

Architecture of Gujarat

Sculpture and architecture of Gujarat include temples of various religions, mosques, viharas of Buddha religion, Maths, Stupas, Chaityas, Cave-temples, Jain temples. Besides this, different types of building construction useful for the society like - Royal palaces, forts, domes, gates, kirtistambh (tower of fame) inns (sanctuary), upashrya, visamas, varandas, skylight (Jharookho) watch tower, arches, wells, step wells, lakes and ponds, figures of animal and birds are the most beautiful and magnificent structures.



3.11 Somnath Temple



3.10 Kirti Toran of Vadnagar

(1) **Temple** : In the religious field, temples of different religions have been built in Gujarat. They are temple of Bhadrakali, Geeta Mandir, Veda temple, Jagannath temple (Jamalpur), Ranchhodraiiji temple (Dakor), Sun temple (Modhera), Hatkeshwar Mahadev temple (Vadnagar), Ambaji temple, Shamlaji temple, Somnath temple, Jagat temple

(Dwarka), Bahucharaji temple, Mahakali temple (Pavagadh), Swaminarayan temples, Brahmaji temple (Khed Brahma), Khodiyar Mataji temple (Bhavnagar), Madh of Ashapurama (Kachchh) etc.

(2) **Mosques** : Jama Masjid near Teen Darwaja is in Ahmedabad. Sultan Ahmad Shah - I built this

mosque in 1424 A.D. It has 260 pillars and 15 domes. Other structures include Sidi Saiyyad grill with minute carving, Roza of Sarkhej, Shaking towers (Ahmedabad), Mosque of queen Sipri, which is also known as 'Mosque of Nageena' and Jama Masjid at Champaner. There are many such mosques in big cities of Gujarat.

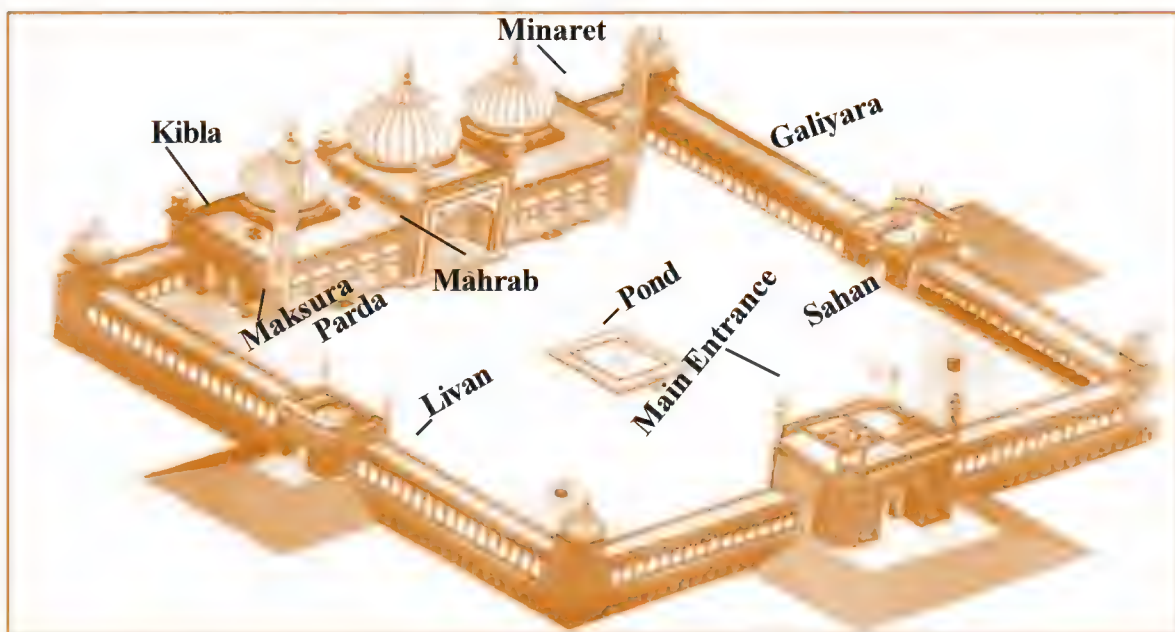
(3) Jain Temple : Jain temple of Hathi sinh, Kumbhariyaji, Shankheshwar, Siddhgiri, Shetrunjya giri, Palitana etc. are quite well-known from sculpture, architecture and carving point of view.

(4) Step-wells of Gujarat : Step well of Adalaj, Step well of Dada Hari (Hari ni vav, Ahmedabad) Rani ni step-well of Patan, Hira Bhagol of Dabhoi etc. are very splendid examples of step-well (vav) construction.

Apart from this, there are many best specimens in the field of architecture e.g. Fort of Bhadra, Teen Darwaza, Nageenawadi, Kankariya Lake (Ahmedabad), Rudra Mahalaya (Siddhpur), Shahstralinga Lake (Patan), Chori of Shamlaji, Samadhi of Tana-Riri, Kirti Toran (Vadnagar), Munsar Lake (Viramgam), Malav Lake (Dholka) etc. This art adds to the dignity and glory of Gujarat. Today Gujarat shines like star in the world map because of its art of sculpture, architecture and carving.



3.12 Step-Well of Adalaj



3.13 Linear Sketch of Mosque Architecture

Information about linear sketch of Mosque

Galiyara

The way to enter and exit from the mosque.

Kibla

This part of architecture is a part of mosque or a hall or hall wall where namaz is performed. It is always in the direction of Kaba.

Livan

The room in a mosque with pillars.

Maksura

End of the mosque wall is known as Maksura which is separated by a railing.

Mahrab

The interior part of mosque wall, which is of Human height, indicates correct direction to Mecca is known as Maharab. (In India, Mahrab is, generally kept in west.)

Sahan

The campus of mosque where the followers of Islam get together for prayer is known as sahan.

Excercise**1. Answer the following questions in detail :**

- (1) Explain town planning of ancient India.
- (2) Give detailed information about road ways and drainage system of town planning of Mohan-Jo-Daro.
- (3) Give information about the caves of Gujarat.

2. Answer the following questions pointwise :

- (1) Give information about Dholaveera.
- (2) Lothal was an important port of Gujarat. Explain.
- (3) Write about the art of pillar inscriptions.
- (4) Write a note on Sun temple of Konark.

3. Answer the following questions in short :

- (1) What is sculpture ?
- (2) What is architecture ?
- (3) Explain the meaning of Mohan-Jo-Daro and write about its road ways.
- (4) Write the meaning of Stupa.

4. Choose the correct option from those given below :

- (1) What is another word used for architecture in Sanskrit language ?
(A) Vastu (B) Carving (C) Temple (D) Ruins
- (2) What was built in Lothal to facilitate the ships ?
(A) Hail (B) Pillar (C) Dockyard (D) Grill
- (3) In which language are stone inscriptions engraved ?
(A) Hindi (B) Brahami (C) Urdu (D) Udia
- (4) Sun temple of Gujarat is situated at
(A) Modhera (B) Vadnagar (C) Kheralu (D) Vijapur
- (5) Which mosque is situated near Teen Darwaza in Ahmedabad ?
(A) Jama Masjid (B) Jumma Masjid (C) Masjid of Sipri (D) Masjid-e-Nageena

Activity

- Prepare a list of historical places of India.
- Prepare album of architectural monuments of India collecting historical pictures.
- Arrange a visit to Lothal, Dholaveera and Sun temple of Modhera.
- Visit the historical places of your area and discuss them in your class-room



Man took help of expressions, symbols, drawings and sounds to communicate his thoughts, ideas, feelings and emotions to other. This led to invention of dialects and scripts. This script contributed to the development of language. Over a period of time, language was being used for expression of thoughts. The constructive use of language led to creation of literature.

From ancient time, Indian literature is known for its diversity and uniqueness. Indian scholars, divided ancient literature into vedic and classical literature. Besides this, some folk literature was also popular.

Language and Literature :

If we quickly look at the history, we can see an emergence of variety of languages since centuries. These languages influenced one another and it resulted in development of literature. As a result, some new languages and literature have developed and flourished. The best example of this is Sanskrit language. Sanskrit language is less in use in present time but religious ceremonies and worshipping rituals are dealt in Sanskrit language.

Generally, language provides opportunity for the humans for better expression and understanding. India's most ancient script is that of Harappan civilization, which has not been deciphered and so we have not obtained much information about their languages.

Maharshi Panini was a great Sanskrit grammarian. The most important book of this time is Maharshi Panini's 'Ashtadhyayi' which is a noteworthy book of Sanskrit grammar of 4th century. Sanskrit is considered the language of 'Aryans', language of sages or language of scholars. It has been accepted by all at the international level that Sanskrit is the best language for the computer use.

Sanskrit was the chief language for knowledge, science, religion and philosophy.

Ancient Indian Literature :

Vedas - Veda means knowledge, they are four.

(1) Rigveda (2) Samveda (3) Yajurveda (4) Atharvaveda

Rigveda : The most ancient book of Indian literature is the Rigveda. It consists of 1028 verses. It is a wonderful work divided into 10 divisions. Most of the verses are prayers of God. They were used during the yagnas. Among the verses those worshipping Usha (The Goddess of dawn) are fascinating. This work describes political, social and religious matters of Aryans who were residing in the region of Saptsindhu.

Samveda : Three other vedas were also composed after Rigveda. Out of them, Samveda was composed to focus on the process of recitation of verses. Hence, it is known as the Gangotri of music.

Yajurveda :

It is called a veda of Yagnas. It is composed in both the forms : prose and verse. This describes the hymns recited at time of Yagyas, the religious practices and rituals.

Atharvaveda :

Atharvaveda describes various types of rituals and sanskaras.

Upanishad :

The upanishadic literature gives us a vivid description and analysis of the beginning of the universe, the mysteries of life and death, materialistic and spiritual world etc. ' Brihदारanya ' and ' Chhandogya ' are the earliest of Upanishad in the dialogue form. They are 108 in all as mentioned in Mukhtiko Upanishad.

Brahmanical Literature :

Many brahmnical epics were composed to understand the meaning of vedic literature. Any critical appreciation based on vedas, composed in the poetic form are included in brahmanical literature. Vedic literature and directive principles regarding behaviour have been explained broadly.

Aranyakas : Aryans used to spend their last phase of life in aranyakas, making their ashrams in aranyakas / forest. They composed literature based on philosophy, which was the result of their deep thinking. It is known as 'Aranyakas'.

Vedangas : The Vedangas literature deals with the religious practices and rituals, grammar, astrology and astronomy.

The 'Ramayana' and the 'Mahabharata' are two great Indian epics. The present form of these epics can be traced back to the second century. The 'Ramayana' has the story of Ramchandra, the king of Ayodhya. The Ramayana is the smaller epic than the Mahabharata. It narrates many attractive stories of adventure. The Mahabharata is the world's largest epic, has one lakh verses. This describes the war between Kauravas and Pandavas. Besides, it also consists of numerous stories. The Bhagwad Gita, a part of Mahabharata, expounds the deep philosophical principles. It conveys the message of achieving 'Moksha' or salvation through 'Gyana', 'Karma' and 'Bhakti'.

Both the epics the Ramayana and the Mahabharata have been influencing millions of Indian and the literature for a long time. They have implanted motivational seeds of sanskars in the Indians.

During this period of Sanskrit literature was produced, which contained a good combination of religious and worldly aspects of life. The puranas played an important role in explaining initial vedic religion of earlier time. During this period, many scriptures and smruthi granthas were composed. These scriptures dealt with science and philosophy, for example Kautilya's 'Arthshastra' is a book of management as well as books on various topics such as arts, mathematics and other sciences. The smrutigranth as explains the religious teachings, laws and customs.

The earlier Buddhist literature was written in Pali. As it is divided into three sections, it is known as 'Tripitika'. It consists of Sukta pitika, Vinaya pitika and Abhidhamma pitika. Besides, many other works were also composed in Buddhist literature. Gupta period was known as the golden period for the growth and development of sanskrit poems and dramas. The great writers like Kalidas, Bhavbhuti, Bharvi, Bhartrihari, Banabhatt, Mangha and many others belonged to this period. Of these Kalidas is known all over the world. His works, Kumarsambhava, Raghuvansham, Meghdoot, Abhigyan Shankuntalam and Rutusamhar are renowned for their best poetic and dramatic style. Bana wrote the Kadambari and 'Harsha charit' - a biography of king Harsha. Other works of the period are Bhavbhuti's Uttar Ramcharit, Bharavi's 'Kiratarjuniyam', 'Vishakhadatta's' 'Mudra Raksha', 'Shudrak's' 'Mrichchhkatikam' and Dandi's 'Dashkumarcharita'. The subjects of these work were political events, romance, allegories, comedies and philosophy.

Verses were composed in earlier from of Gujarati language. In the course of time, Gujarati language developed and many literary works were composed in it. The heritage of Gujarati literature was made prosperous by literary contribution of Narsinh Mehta, Mirabai, Dayaram, Akho, Premchand, Pritam and others who composed beautiful verses, songs, garba, narrative poems and chhappas etc. After that the scholars like Narmad, Navalram, Kishorlal Mashruwala, Pannalal Patel, Umashankar Joshi, Mahipatram Ruparam Nilkanth, Goverdhanram Tripathi and others enriched the Gujarati literature through their works.

The four dravidian languages : Tamil, Telugu, Kannada and Malayalam developed their own scripts and literature. Tamil is the oldest of these with its literature belonging to early centuries of the Christian era.

According to tradition, three literary gatherings and sangams were held at which many sages and poets recited their compositions. They contained many themes like politics, war and love. The famous works of this body of literature includes “Ethutokoi”, (composition of 8 poems), the “Tolkappiyam” (Grammar) and the “Pathuppattu” (The 10 songs). Thiruvalluvar wrote the famous ‘Kurai’ which in verse deals with many aspects of life and religion. The ‘Shilppadikaram’ and the ‘Manimekhalai’ are some of the most famous works of early Tamil literature.

Medieval Literature :

During the beginning of Medieval age in North India the language of literature was Sanskrit. So the great works were composed during this period were in Sanskrit. In this age two great works were written in Kashmir, first was Somdeva’s ‘Kathasaritsagar’ and second was Kalhana’s ‘Rajtarangini’. There are first historical books of India.

Another famous work of this time is the ‘Geetgovind’ by Jaydeva, which is one of the finest poems in Sanskrit literature. As we have said before, this was the period when the Apabhramas languages had started developing into modern Indian languages. One of the earliest works in an early form of Hindi was ‘Prithviraj Raso’ by Chandbardai. The work that marks the beginning of Hindi literature deals with heroic deeds of Prithviraj Chauhan. In this time, Sanskrit literature made great stride in South India. For sometime, Jainism influenced Kannada literature. The poet Pampa composed ‘Adipurana’ and ‘Vikramarjuna vijayanta’. The poet Ponna wrote ‘Shantipurana’ describing the life of 16th Jain tirthankar. The poet Ranna composed two books namely ‘Ajitnathapurana’ and ‘Gada Yuddha’. The poets namely Pampa, Ponna and Ranna are known as the trio of early Kannada literature. Poet Kambar composed ‘Ramayana’ in Tamil language. Apart from this, other famous literary works were written in Tamil language.

The development of Indian languages and composition got a promotion in Delhi sultanate. Two forms of Delhi language : Khadi Boli and Brij Bhasha began to be used for writing literature. Many devotional songs were composed in these languages. Many heroic poems and stories were composed in Rajasthani language, which is similar to Hindi and Gujarati. The heroic works like ‘Alha’, ‘Udal’ and ‘Visaldev Raso’ were popular at that time. A book called ‘Chandrayan’ written by Mulla - Daood is the oldest book in Awadhi language. However, the critical appreciation of the ancient books was still written in Sanskrit language.

Persian was the language of court - of Delhi Sultanate. Consequently, many Persian words are seen in Indian languages. Many historians emerged out during this period. We get proper description of Indian history through Turkish writer in Persian language. Ziauddin Barani wrote the Tarikh-e-Firoz Shahi which gives a detailed account of the region of the Khilji and Tughluq kings. He also wrote a book on political theory called Fatwa-e-Jahangiri.

The most outstanding literary figure of this period was Amir Khusro. He was a poet, historian, mystic saint and composer of music. He was also a disciple of Nizamuddin Auliya. He wrote the ‘Ashiqua’, the ‘Nah’, ‘Sipiher’, the ‘Kiratul sadayan’, the ‘Khazain-ul-Futuh’ and several other works of poetry. He

took great pride of his being an Indian and praised India as the 'Earthly Paradise'. He praised India's flora-fauna, its beauty, its buildings, its knowledge and learning. He strongly believed that in many respects the essence of Hinduism resembled Islam. He considered 'Hindawli' the Hindi spoken around the region of Delhi, his mother tongue and composed many verses in it. He composed verses in many languages. He wrote a number of bilingual quatrains and verses in Hindi and Persian. The healthy tradition started by him continued for centuries after him.

The regional kings gave a great impetus to regional languages and literature. Bhakti saints preached in the languages of the people. Many of them like Kabir were great poets. Bhojpuri and Awadhi were the major dialects during those days. The works of Kabir are chiefly composed in 'Sadhukhadi'. Among them Kabir's Dohas have become a part of folklore. Malik Muhammad Jayasi wrote 'Padmawat' in Awadhi. There are many other poets of Awadhi in this period.

Moreover, the well-known 'Ramcharit Manas' by Tulsidas was written in Awadhi. There were many other writers of Awadhi language.

Besides Hindi language, literature in other languages also developed. In Bengali the Ramayana by Krittā Vāsā and the hundred of lyrics by the famous poet Chandidas were written under the patronage of the rulers. With saint Chaitanyas, the tradition of writing devotional songs began. Narsinh Mehta wrote devotional songs in Gujarati and Namdev and Saint Eknath in Marathi. There were important developments in Kashmir, under Zainulabidin, under whose patronage many Sanskrit works like the 'Mahabharata' and Rajtarangini were translated into Persian.

In the reign of Kings of Vijaynagar, Sanskrit literature continued to develop. However, this was an important period for the growth of Telugu literature. Raja Krishnadevarai, the great king of Vijaynagar was also a Telugu and Sanskrit writer. He wrote the 'Amukta Malayd'.

As in art and architecture the Mughal period also saw a great development in literature. Babar, the first Mughal ruler was one of the pioneers of Turkish poetry and also the author of a very valuable autobiography 'Tuzuk-e-Babar' in Turkish, which was later translated into Persian entitled as 'Babarnama'. Gulbadan Begum, sister of emperor Humayun, wrote 'Humayun-nama'. Jahangir wrote his great autobiography, the Tuzuk-e-Jahangiri. Aurangzeb also was a prolific writer and the last Mughal emperor Bahadur Shah Zafar was a notable Urdu poet.

Hindi literature made significant progress during Akbar's reign. Tulsidas and Surdas wrote in this period. The great poet Keshavdas wrote on love and separation. Rahim's 'dohas' are still popular all over India.

Many noteworthy books were written during this period. Abdul Fazl wrote the 'Ain-e-Akbari' and the 'Akbarnama'. Ain-e-Akbari gives details of Indian customs, manners, religion, philosophy, economic condition and almost every aspect of life. As a historical work it is perhaps unparalleled. Abul Fazl's brother Faizi was great Persian poet and he translated many Sanskrit works into Persian. Akbar had established an independent department for translation of Sanskrit works like the Mahabharata and the Ramayana, the Atharvaveda, the Bhagwad Gita and the Panchtantra.

One of the most significant developments during the medieval period was the birth of Urdu language. This new language soon developed into one of the richest modern Indian languages. It produced great poets like Wali, Mir Dard, Mir Taqi mir, Nazir Akbarabadi, Abdullahkhan, Galib, Iqbal and others.

Urdu prose also developed in the early 18th century when the translation of most of the historical works from Sanskrit into Urdu began. At the same time original prose work in Urdu was written. Muhammad Hussain Azad's 'Darbar-e-Akbari' is one of the best works of Urdu language.

The Ancient Universities of India

(1) Nalanda : Ancient Nalanda University was situated at Badgaon village of Patna district in Bihar.

The Nalanda gave more importance in Buddhist and Jain traditions. This ancient university also became pilgrimage of Jains as Mahavir Swami had performed fourteen chaturmas here. In the fifth century Kumar Gupta had build a monastary here. Since then fame of Nanlanda had increased. There were thousand of priceless treasures of manuscripts. This was a pious place of Indian culture. Students from various part of the world used to come here for study. The great traveller Heun Tsang also came here. Today only the ruins of the great university. But amidst the ruins, one can visualize the glorious culture of India.



4.1 Nalanda University

A student who passed out from Nalanda was considered the ideal student of India. During fifth to eleventh century, education was best at Nalanda and in India at that time had best libraries of the world were available. Many students of India and abroad used to come for study and research in the library of Takshshila as well as in Nalanda University. Huen Tsang took 657 books from here to China.

Huen-Tsang visited in the 7th century. There were seven huge Halls (rooms/sections) in the university. There were 300 rooms for delivering lectures. Special monastries were built for dwelling of students. Many villages were donated for University sustenance. Food and clothing facilities were provided free of cost from the earnings obtained from those villages. Its book repository (Library) area was known as "Dharmgunj" During 5th to 11th century (BC) Nalanda was a reputed as well an esteemed centre of education.

(2) Takshashila : Ancient university of Takshashila was a located at Rawalpindi of present Pakistan. It was the capital city of ancient Gandhar region. This university imparted education in 64 subjects. Most of the students stayed in the ashram to practice with guru. 'Jivak' the disciple of Lord Buddha learnt the lessons of Ayurveda here. According to a belief, this university was named after the name of Taksha, the son of Bharat, brother of Lord Ram born in Raghukul. It was a renowned education centre of 7th century. Students were free to study the subjects of their interest. Inspite of the limit allotted of 20 students per teacher, they used to teach even more. Students from distant cities like Varanasi, Rajgruha, Mithila and Ujjain overcrowded the university.

Princes of Varansi and Prasenjit, the king of Kaushal, studied here, also the great grammarian Panini and expert Politician Kautilya got education from this university. Takshashila was the best centre for higher education. Normally students used to stay with Guru to practice. Education of vedas, military science, Gajvidhya, archery, grammar, philosophy, warfare, astronomy, astrology was given here. Chanakya the mentor of Chandragupta Maurya also studied here. Chinese scholar Fa-Hien visited this university in the beginning of 5th century.

(3) Varanasi (Kashi) : Varanasi was famous as one of the place of pilgrimages during 7th century. It was also the famous education centre. It grew as the religious centre for the Aryan culture in Upanishadic period. King of Varanasi, Ajatshatru was a great philosopher of upanishadic age and great supporter of education. It is mentioned in Vyaas Samhita that Maharshi Vedvyas had his ashram in Varanasi.

Lord Buddha chose Varanasi a suitable place for the propagation of his preachings. Potent philosopher Adishankaracharya had to move to Kashi to adopt the new principles of Vedantas. Vallabhacharyaji and Chaitanya Mahaprabhu the pioneer of pushtimarg attained prestige for their Vaishnav sects in Kashi. Majority of scholar families of Punjab had to migrate to Kashi while a few families migrated to Kashmir. Many other princes came for education in Varansi. Monestary at Sarnath became a famous education (centre) under the patronage of emperor Ashoka.

(4) Vallabhi : This university of Gujarat was a very famous centre of education in 7th century. There was a significant contribution of contemporary ruler of Vansh Dynasty and its people to make Vallabhi a well renowned and a huge centre of education. (Vidhyadham) Vallabhi was the centre of Hinayana cult of Buddhist religion. In the middle of seventh century Buddhist scholars like Sthirmati & Gunmati were the leading principals of Vallabhi. The students from the distant areas of Ganga-Yamuna used to come here for higher studies Chinese traveller It sing noted that vallabhi completed with the famous education centre Nalanda which was located at eastern part of India.

Vallabhi was a capital and an international port (from 480 AD to 775 AD). The ruler of vallabhi belonged to Maitrak Dynasty and he patronized education and university as well. It is also notable that royal people of Maitrak Dynasty were not Buddhist. However, they were helping the institution

In 775 AD, Arabians attacked, Maitraks were defeated and university was closed down. The name of famous scholars were written on the gate. Scholars by showing their erudition were getting higher rights in Rajsabha.

Knowledge, worship and particular system of education made the university famous not only in India but also in the world of that time. Students from India and abroad used to come for education in this university.

It was an international university in the real sense. Almost all the branches of knowledge were taught here. The maintenance of the university was done through the charity given by the kings and landlords. Actually, it showed the loyalty of the people towards the University.

It was world renowned university of Indian education (Vidhya) for the knowledge of arts and science.

Exercise

1. Answer the following questions in details :

- (1) How many Vedas are there in India and which are they ?
- (2) Write a note on Takshashila Vidhyapith.
- (3) Describe Medieval literature.

2. Answer the following questions pointwise :

- (1) Give information about Vallabhi Vidhyapith.
- (2) Give information about Nalanda Vidhyapith.

3. Answer the following in short :

- (1) Write a note on Yajurveda.
- (2) What information is given in Yajurveda ?
- (3) Which philosophical principles have been explained in Shrimad Bhagwad Geeta ?

4. Answer the following questions selecting the correct option from those given below :

- (1) is the most ancient book of Indian literature.
(A) Rigveda (B) Yajurveda (C) Samveda (D) Atharvaveda
- (2) In which language is Buddhist literature written ?
(A) Pali (B) Hindi (C) Brahmi (D) Gujarati
- (3) Which is the oldest language of Dravidians ?
(A) Tamil (B) Telugu (C) Kannada (D) Malyalam
- (4) Which is the first literary composition of poet Chandarbardai in the Hindi literature ?
(A) Prithviraj Raso (B) Vikramankdev charit
(C) Kaviraj Marg (D) Chandrayan
- (5) Which is the literary composition of Maharshi Panini ?
(A) Ashtadhyayi (B) Prithviraj Raso (C) Vikramandev charit (D) Chandrayan

Activity

- Prepare a short note on the modern literary works of India.
- Prepare the list of main universities of Gujarat.
- Collect information about the ancient universities of Nalanda, Takshshila, Vallabhi and Vikramshila.
- Know more details about renowned women Apala, Lopmudra Gargi using your school library.



The discoveries and inventions in the field of Science and Technology have brought countries of the world closer. Co-operation among all the nations has increased hence new attitude has developed. Countries have become oriented towards peaceful co-existence and world peace.

Science means systematic 'Knowledge' and Technology means 'the practical utility of systematic knowledge'. Science and technology inspite of being two different words, they are linked to each other.

Heritage of Ancient India in the field of Science and Technology

The great sages of our ancient India have gifted invaluable heritage of science to the world. They have made outstanding contribution in the field of Metallurgy, Chemistry, Science of medicine, Surgery, Mathematics, Astronomy, Astrology, Vastushastra and Physics. It is a matter of great pride for us. India has contributed not only in the field of literature, art, religion, education and philosophy but also it has made immense contribution in the field of science and technology. Modern age researches have proved that India has scientific attitude along with religious outlook.

Metallurgy :

Since ancient age, the people of India use metallurgy in their practical life. Ancient India made extraordinary progress in the field of metallurgy. A metallic idol of a female dancer discovered from Indus valley civilization is an exemplary achievement of ancient India. Later, statues of Buddha belonging to the Kushan period have been found at Takshshila. In South India, during the Chola period numerous metal idols were made. The statue of Natraja, a masterpiece in sculpture is famous all over the world. It is preserved in a museum at Chennai. Another well-known metal idol 'Ram - The archer' can be seen in the museum, artistic statues of Gods-Goddesses, birds and animals and betel-nut cutters are considered to be the best example of metallic art. All of them have important place in the history of India.

Chemistry (Alchemical Lore) :

Chemistry is an experimental science. This science is very useful for various minerals, plants, seeds for agriculture, making of various metals or to bring changes in them. It is also useful for making medicine.

Acharya Nagarjun, a learned Buddhist of Nalanda University is known as Acharya in the field of Chemistry. He had written books like 'Rasaratnakar' and 'Arogyamanjari'. Acharya Nagarjuna, advocated the use of Alopathy along with herbal medicines. It is believed that the use of mercury ash as a medicine was initiated by him. Nalanda University had its own school of chemistry and furnace for study and research. The description of main rasa, uprasa, ten types of poisons as well as various types of salts and ash of minerals is seen in the chemistry.

The copper statues of Buddha reflect an expert knowledge and skill in the field of chemistry. The copper statue of Buddha discovered from Sultangunj in Bhagalpur district of Bihar is $7\frac{1}{2}$ feet high and weighs one tonne. The statue of Buddha at



5.1 Acharya Nagarjun

Nalanda is 18 feet high. An exquisite example is of Vijay stambha the 24 feet high iron pillar, which weighs 7 tonnes, built by Chandragupta II. In spite of nature's fury over centuries, the pillar has not yet corroded. This is the best example of alchemical lore of India.

Science of Medicine and Surgery :

India attained an unprecedented achievement in the field of medicine and surgery. Since ancient period Maharshi Charak, Maharshi Shushrut and Vagbhatta pioneered the Indian medicine science and surgery through their intense researches and reached to the greatest height.

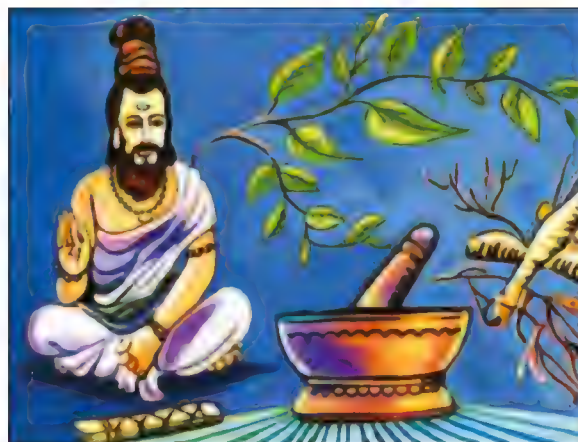
Maharshi Charak has written a book 'Charak Samhita' in which he has mentioned over 2000 medicinal herbs. Maharshi Shushrut has mentioned instruments used in surgery. The instruments were so sharp that they would split a single vertical hair in two divisions. Vagbhatta has written a book "Vagbhatta Samhita", is also a very important work. Study of Charak Samhita, Shushrut Samhita and Vagbhatta Samhita is very useful for every doctor. Hindu herbal science of ancient time is enriched with huge collection of minerals and medicines from plants and animals. This has presented a detailed and complicated process of making medicines, their classification and their usage. They could even stop blood circulation with bowl-shaped bandage. They could skillfully operate on abdomen, kidney, cataract, hernia, stone, piles and bladder etc. They could classify, also join the broken or displaced bones and extract the things pierced into the body easily and skillfully. recognize symptoms and diagnose the disease. They also gave dietary directions after post recovery of diseases.

They had knowledge of plastic surgery as well joining nose and ears. They showed a keen interest in teaching students the method of surgery, by doing surgery on the deadbody or on the wax statue. They conducted risky operations during delivery. They were expert gynaecologists and paediatricians.

Veterinary science also developed in ancient India. They wrote books on diseases related to the horses (Ashwa) and elephants (Hasti). Among them 'Hasti Ayurveda', Shalihotra and 'Ashwashastra', are well known. The scholars/science writer of medicine Vagbhatta made valuable contribution through his work 'Ashtang Hriday' in the field of diagnosis.



5.2 Iron Pillar, Delhi



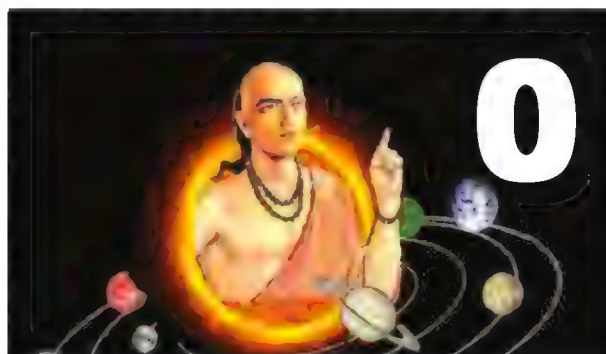
5.3 Maharshi Charak



5.4 Maharshi Shushrut

Mathematics :

Many epoch making mathematical discoveries were considered to be made in India through which contemporary global affairs are carried out. The gifts of India to the world are discovery of zero, decimal systems, algebra, theorem of Boddhayan, Geometry and Arithmetic. Aryabhatta discovered 'zero' (0), the process of writing zero after figures was discovered by the sage named 'Grutsamad'. The ancient Indian mathematicians have decided the names of the numbers made up by placing 53 zeros after 1(one). Decimal system had been seen for measuring and weighing instruments which had been found from the remains of 'Harappa' and 'Mohan-Jo- Daro'.



5.6 Aryabhatta

Bhaskaracharya has written books 'Lilawati Ganit' and 'Bij Ganit' in 1150 A.D. He discovered signs of

addition (+) and subtraction (-). Brahmgupta introduced the types of equations; Boddhayan discovered theorem (triangle policy). Aapstambha had decided the masurement of sacrificial pits (yagyavedis) used for vedic Yagyas in 'Shulva Sutras' (1800 B.C.). It also consists analysis of principles. Aryabhatta had mentioned the value of π (Pie) is $\frac{22}{7}$ (3.14) in his book "Aryabhattiyam" he also propounded that π (pie) is constant to show the ratio of circumference and diameter of circle..

Multiplication, addition, subtraction, square-root, cube-root etc, 'Ashtang' method introduced by Aryabhatta in his work hence Aryabhatta is known as the 'father of Mathematics'. Moreover he had written many other books like 'Dash Gitika' and 'Aryabhattiyam'. He has described main principles of Astronomy in short in his book named "Aryasiddhanta". He found the solution of fundamentals of methematics, i.e Arithmetic and Geometry.

A part from this, various aspects of Mathematics had been discussed by many scholars in their books. Among them, the scholars like Boddhayan, Aapstambha, Katyayan, Bhaskaracharya and Bhramhagupta are included.

Other Sciences

Many books were written on various sciences in the ancient India.

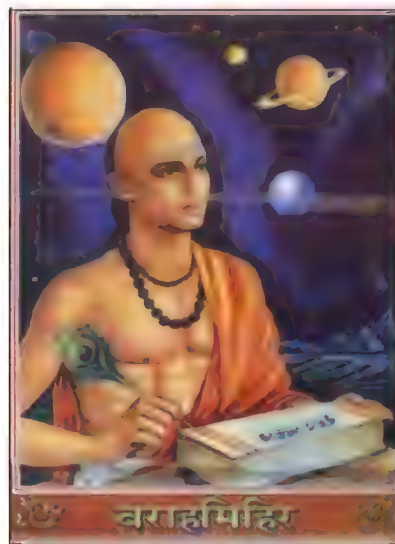
Other Sciences

Sr. no	Name of books Based on Science	Authors
1	Prajananshastra	Bhrambhavya panchal
2	Chikitsasangraha	Chakrapanidatta
3	Kamasutra	Vatsayayan
4	VrukshaAyurveda	Maharshi Parashar
5	Yogashastra	Maharshi Patanjali
6	Yantra sarvasva	Maharshi Bharadwaj
7	Kaalganana	Shakmuni

Astronomy And Astrology

Astronomy is the most ancient science. Many works (Grantha) related to Astronomy had been written in India. An organized and deep study of Astrology was made by Indian ancient universities. Planets and their movements, constellations and other celestial objects were used for calculations through which astrology and astronomy were developed remarkably, 'Predictions' were made on the basis of planetary movements. Aryabhatta made a remarkable contribution in the field of Astronomy. So the first Indian satellite was named "Aryabhata" on his name. He declared that the earth rotates on its own axis and he proved that the basic reason for lunar eclipse is the shadow of the earth, which was addressed as 'Ajarbhar' by the scholars. In the same manner, Brahmagupta popularized the laws of gravitation in his book "Brahmasiddhant".

Varahmihir was the great astrologer and astronomer who divided astrology into 3 sections - Tantra, Hora and Samhita. His Grantha named 'Brihadsamhita' gives information regarding effects of planets on man's future, his characteristics, various classes of animals, the time of marriage, ponds, wells, gardens and good omen for sowing. We should feel pride that our ancestors were experts in the various sciences.



5.7 Astrologer Varahmihir

Vastushastra :

There is an immense contribution of ancient India in the field of Vastushastra. It is an inseparable part of astrology. Vastushastra of India is being recognized, dignified and praised by many countries of the world. Brahma, Narad, Bruhspati, Bhrugu, Vashishtha and Vishwakarma have made unique contribution in the field of Vastushastra.

They have propagated the principles of construction for dwellings, temple, palace, ashwashala, forts, store-house of ammunition and the town planning. The description of Vastushastra is mentioned in 'Brihat Samhita', Rana Kumbha of Mewar revived this science.



5.8 First architect of God : Vishwakarma

in the 15th century.

According to the traditional belief, Vishwakarma was the first architect of Gods. He divided Vastushastra into eight sections. Various information of Vastushastra like selection of place, shapes, structure, proper planning of things, temples, Bhramsthan, dining - room, bedroom etc. are mentioned. As the time passes by changes are taking place regarding the principles and understanding of Vastushastra. Now it is being adopted by the foreigners.

Ancient Indian knowledge of science has been accepted by the world. Indian culture is very vast and heterogeneous. It is a blending of science and religion, traditional ideals and practical knowledge, which is rarely seen in the other countries of the world. Tolerance and equality towards all religions is seen in our culture. In spite of having diversity in religion, life style and values we see unity in our country. We should not forget that, Indian culture reflects unique feature of 'unity in diversity'.

Exercise

1. Answer the following questions in detail :

- (1) Write about the contribution made by ancient India in metallurgy.
- (2) Write about the development in chemistry achieved by ancient India.
- (3) Discuss ancient India's progress in medical science and surgery.
- (4) Write about the scientific heritage of ancient India.

2. Answer the following questions pointwise :

- (1) Write about the progress made by ancient India in mathematics.
- (2) Write a short-note on : Astronomy of ancient India.
- (3) Write contribution of India in the field of astrology.
- (4) Which information are included in Vastushastra ?

3. Answer the following questions in short :

- (1) What is meant by science and technology ?
- (2) Write about the contribution of Nagarjuna in the field of chemistry.
- (3) Write a note on discoveries made by Aryabhatta in mathematics.
- (4) Into how many sections is astrology divided ?
- (5) Name the pioneers of Vastushastra ?

4. Choose the correct option from the following to answer the following question :

- (1) Which sculpture has international significance from the art point of view ?
(A) Buddha (B) Nataraja (C) Bodhi Gaya (D) Ram-the archer
- (2) Which is not correct statement from the following ?
(A) Nagarjuna is considered as an Acharya of chemistry.
(B) The use of mercury ash as a medicine has been initiated by Nagarjuna.
(C) Chemistry is not a science of experiment.
(D) Description of metallic ashes is seen in the works (books) of chemistry.

- (3) Maharshi Charak : Charak Samhita ; Maharshi Shushrut :
- (A) Shushrut Samhita (C) Vagbhatta Samhita
(B) Charak Shastra (D) Shushrut Shastra
- (4) In the class of a school various students discuss about mathematics. Which one is true among them ?
- Shreya : Bhaskaracharya had written book named “Lilawati Ganit” and “Bij Ganit”.
- Yash : Boddhayan discovered decimal system.
- Mansi : Aryabhatta is acknowledged as a father of mathematics.
- Harda : India discovered zero (0).
- (A) Yash (B) Harda (C) Shreya (D) Shreya, Mansi, Hard
- (5) Book written by Brahmbhava Panchal is
- (A) Chikitsasangraha (B) Prajananshastra (C) Kamasutra (D) Yantra Sarvaswa
- (6) In ancient India, who wrote ‘Brahmsidhant’ which declares the law of gravitation ?
- (A) Brahmgupta (B) Vastasyayan (C) Grutsamad (D) Maharshi Patanjali
- (7) Which science from the following suggests about the principle of direction while constructing temples, palaces, ashwashala, fort etc. ?
- (A) Mathematics (C) Science of medicine
(B) Chemistry (D) Vastushastra

Activity

- Arrange a seminar on the subject of “Science of Ancient India.”
- Prepare an exhibition of photographs of - Nagarjuna, Charak, Shushrut, Aryabhatta, Brahmagupta, Bhaskaracharya, Varahmihir, Vishwakarma etc.
- Prepare handwritten article on "Science in India."
- Collect the information to make a project work "Scientist of India".
- Find out details of ‘Ancient inventions of Science’ with the help of Internet and exhibit them on the notice board.
- Prepare chart on the subject “Science of Ancient India” by using library
- Arrange an elocution competition on ‘Contribution of Women in science’.

Fact

22nd December is declared as ‘National Maths Day’ and 2012 as ‘National Maths Year’ in the memory of Shrinivas Ramanujan.



The cultural heritage of India is very rich and prosperous. Indian as well as foreign visitors are attracted to visit the places of cultural and natural heritage of India. In this chapter, we shall study about these places.

Caves of Ajanta :

The famous caves of Ajanta are situated in Aurangabad district near Ajanta village. They are important from the point view of art of Vastu. These caves are divided into two divisions : (1) caves based on wall paintings (2) caves based on sculpture. Caves of number 1, 2, 10, 16 and 17 have excellent paintings wall and have attained the highest rank in wall painting. The theme of these wall paintings is buddhist religion. Ajanta caves are divided into two categories, they are Chaityas and Viharas. Cave no. 9, 10, 19, 26 and 29 are Chaityas, whereas the remaining caves are Viharas. Ajanta caves were forgotten with the passage of time but in 1819 A.D. an English captain John Smith rediscovered them. Ajanta caves are the magnificent example of initial buddhist art of Vastu, art of paintings and sculpture. Human interference and impact of time have greatly damaged them. Ajanta caves are famous not only in India but also in world for their extra-ordinary rich art. The fine blending of wonderful art of painting, sculpture and architecture of Ajanta caves has earned pride for an Indian Art.

Things to know

Chaityas means temple-halls for buddhist monks. Stupas are built in the interior most end of the caves. Viharas means buddhist monestories where buddhist monks reside and study.

Ellora Caves :

Ellora caves are situated at Aurangabad district in Maharashtra. There are 34 caves in all. There are three groups of cave temples and they are different from each other :

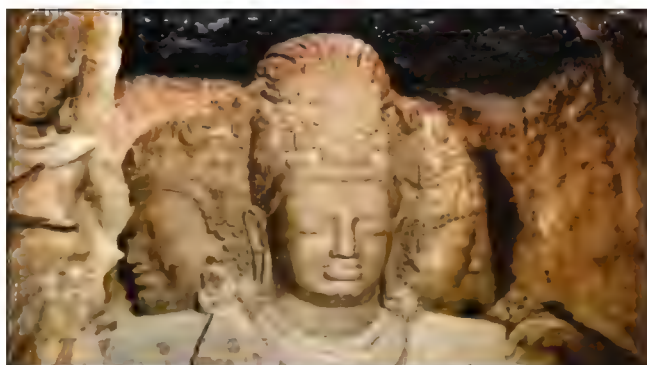
- (1) 1-12 are Buddhist caves
- (2) 13-29 are Hindu caves
- (3) 30-34 are Jain caves

Hindu caves are built during the reign of Rashtrakuta dynasty. Kailias temple is situated in cave no.16. It is 50 m long, 33 m wide and 30 m high. This temple is carved out of a single massive rock. This temple is adorned with beautiful doors, balconies and series of pillars. The beauty of temple can not be described in words. They are constructed during the time of 600 AD to 1000 AD. It is a live display of ancient Indian civilization. Caves dedicated to Hindu, Jain and Buddhist religions. Ellora campus is not only an example of magnificent creation of art but also best example of excellent technology. Moreover, it describes about the patience of Indians.

Elephanta caves :

These caves are built in the Arabian sea, 12 km away from Mumbai in Maharashtra. There are 7 caves in all.

There is a huge stone monument of an elephant, on seeing this structure the Portuguese named it elephanta. Many beautiful figures have been carved, out of them the magnificent "Trimurti Temple" (Brahma, Vishnu and Mahesh) in cave no.1 is the best specimen of sculpture. In 1987 A.D. UNESCO has placed "Elephanta Cave" in the list of world heritage. Local fishermen call it 'Dhara puri'.



6.1 Trimurti

Mahabalipuram :

Mahabalipuram is located 60 kms away from Chennai. This city of Tamilnadu is famous for its splendid temple architecture and seashore. Narsinh Varman-I, who was popularly known as Mahamalla, belonged to Pallava dynasty. 7 Chariot Temples were built here. At present, only five chariot temples exist. Two chariot temples have submerged in the sea. There is an amazing figure of Lord Vishnu in a smiling pose. Besides, there is an idol of Goddess Durga slaying Mahisasura is worth seeing. Mahabalipuram, which has an unparalleled architectural rock sculpture, was also a famous harbour of ancient time.

Pattadakal Memorial :

Pattadakal, the capital of Chalukya dynasty is 16 kms away from Badami Nagar and Dravid style of architecture is used in the construction of temples here. These were built during the seventh and eighth century. Virupaksha temple is the biggest temple in Pattadakal.

Temples at Khajuraho :

These temples are located in a small village named Khajuraho at Chattarpur district of Madhya Pradesh. Khajuraho was the ancient capital city of the Chandela Rajputs of Bundelkhand, so temples were built by these kings during their reign (905 to 1050 AD). Presently, 25 temples are in existence. Most of them are Shaiva (Shiva) temples, where as some of them are Vaishnav and Jain temples. They all have similar type of architecture and sculpture. The 64 yoginis temples is the main temple. The toran(Arch) of the temple is the best example of ornamental style of architecture. All of the temples were constructed with granite stone. Khajuraho temples were constructed in Naagar style Art of sculpture and art of vastu of Khajuraho temples spell-bound the visitors.

Sun Temple of Konark :

It is situated near the bay of Bengal at Puri district in Odisha. It was constructed in 13th century during the reign of King Narsinh Varman-I, who belonged to the Garg Dynasty. This chariot temple drawn by seven horses took the form of chariot of Sun God. It has 12 massive wheels, providing beauty to the pedatal of temple. These wheels reflect twelve months and each wheel has eight spokes which shows eight prahars of the day. Details of motif and subject diversity of this temple is unparalleled. This temple has been built by black stones. Hence, it is called as “black pagoda” Odisha. These remains reflects the sculpture and civilization of 13th century Odisha



6.2 Wheel of Sun Temple of Konark

Bruhadeshwar Temple :

This temple is located at Tanjur in Tamilnadu. This temple was built during 1003 AD to 1010 AD. It is a Shiva Temple so it is called Bruhadeshwar. It is built by king Rajaraja-I of Chola dynasty. It is known as Rajrajeshwar temple. The height of this temple is 500 feet, its width is 250 feet. It is spread in a vast area surrounded by the wall. Its summit is 200 feet high above the ground hence this temple attained the place in the temples of



6.3 Bruhadeshwar Temple

high pinnacless. This is a marvelous heritage of architectural art of India due to its gorgeous and huge size of pinnacle and artistic decoration. In the same way, it has secured a place among the best temples of South India. It has been constructed in Dravidian style of art.

Qutub Minar :

Qutub Minar is located at Delhi. It was built in the 12th century by Qutubbudin Aibak, who was the founder of Gulam dynasty. After his death the remaining work was completed by his son-in-law Iltutmish. This 72.5 m tall sky scraper is made out of round red stone and marble. Its circumference is 13.75 m at its base and it is reduced to 2.75 m at its top. Verses of Quran have been engraved on it. It is the tallest stone minaret of India.

Hampi :

This town is situated on the bank of river Tungabhadra of Hospet, in Bellary district of Karnataka. Hampi was the capital city of Vijaynagar kingdom. The rulers of Vijaynagar kingdom were lovers of art. Peculiar type of architecture was developed in Vijaynagar during their reign. The period of Krishnadevaraya was considered to be the golden period of this art, as it reached to its highest peak. The main feature of architecture style of Vijaynagar was to carve out huge and magnificent pillars, from the stones. Pillars and columns made were artistically adorned with the figures of Gods, Goddesses, humans, animals, warriors and dancers. In Hampi village of Vijaynagar kingdom, during the reigns of Krishnadevaraya the Vithala temple and Hajra temples were built besides it. Virupaksha temple Achyutaray temple of Lord Krishna are the best examples of architecture.

Humayun's Tomb :

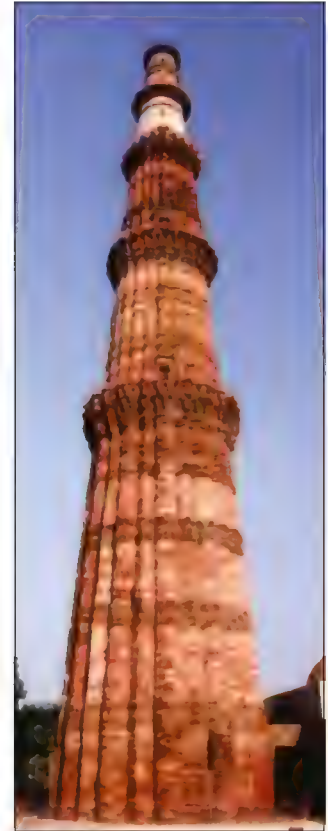
The tomb of Humayun at Delhi is the best specimen of the Mughal architecture. After the death of Humayun, it was built by his wife queen "Hammeda begum". This tomb was made in Iranian style of art. Red and white stones were skillfully used in it.

Fort of Agra :

'Fort of Agra' is in the Agra city of Uttar Pradesh. It is made up of red stones, hence it is known as red fort. It was built by Akbar in 1565 AD. We can see the reflection of Hindu and Iranian style of art in it. The fort has 70 feet tall wall with 1.5 mile circumference. Red stones are skillfully embeded on the wall in such a way that no cracks can be seen on the wall. Jahangir palace was built by Akbar in this fort. The architectural style of Bengal and Gujarat on Jahangir Palace can be seen clearly. Sahajahan had spent the last days of his life in this fort.

Taj Mahal :

Taj Mahal is located at Agra in UP on the bank of river. Taj Mahal is one of the seven wonders of the world. It was constructed by Mughal King Shahajahan in the memory of his queen Mumtaz Mahal. Mumtaz Mahal died in 1630 AD. After her death the construction of Taj Mahal started in



6.4 Qutub Minar



6.5 Taj Mahal

1631 AD. It was completed in 1653 AD after 22 years. Shahajahan used expert Indian sculptors besides Iranian, Arabian, Turkish and European sculptors/artisans were also engaged in the construction of Taj Mahal. Taj Mahal is counted as one of the best tombs of the world. Due to this tomb, the name of Mumtaz Mahal has become immortal; this was the innermost wish of Shahajahan. The building of Taj Mahal is spread in rectangular shape from North to South. The grave of Mumtaz lies in the centre of Taj. It is surrounded by beautiful artistic octagonal fence, carved out of stone. A beautiful saying is inscribed on one of its archs. "Pious hearts are welcomed in the garden of paradise". The architecture of Taj glorifies the rich heritage of India. The grandeur of the Taj attracts thousands of people every year.

Red Fort :

Red Fort located at Delhi was built by Shahajahan in 1638 A.D. This fort is made of red stone. Shahajahan founded city namely Shahajahanabad in the same fort, which was named after him.

This fort includes Diwan-e-Aam, Diwan-e-khas, Rang Mahal etc. Diwan-e-khas is more magnificiently decorated than other buildings. It is decorated with an amalgamation of gold and silver, embedded with precious stones. The other buildings of Red fort are Rang Mahal, Mirror palace (Aaina Mahal) of Mumtaz, Lahori gate, Meena bazar and Mughal Garden etc. which are the centre of attraction of RedFort. Peacock throne is the best exquisite creation of this fort, which Nadirshah took along with him to Iran. Red fort is one of the outstanding buildings among the mughal art of architecture. Every year our Indian flag is hoisted on the Red fort on national festivals.



6.6 Red Fort

Fatehpur Sikri :



6.7 Buland Darwaza

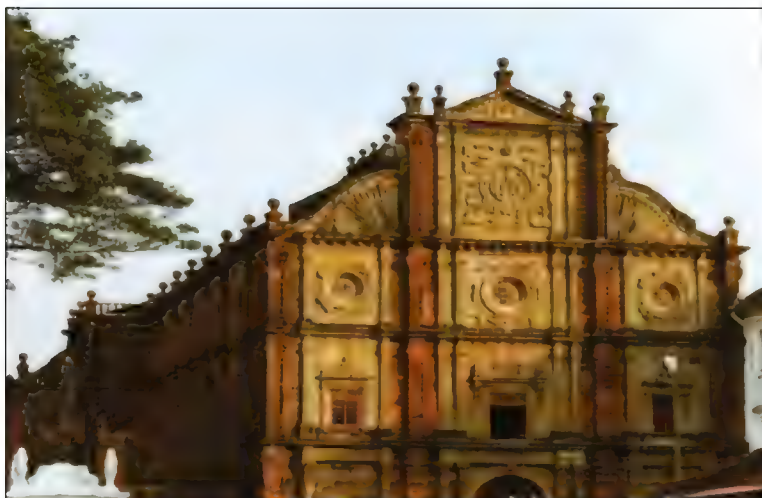
It is 26 miles away from Agra in Uttar Pradesh. Akbar has founded this city in the memory of sufi saint Shaikh Salim Chisti, he made it his own capital city. The building construction of Sikri was started in 1569 AD and completed till 1572 AD. The best buildings among them are palace of Birbal, Golden palace of Bibi Mariam, palace of Turkey Sultan, Jama Masjid and Buland Darwaza.

Buland Darwaza of Fatehapur Sikri is 41 m wide and 50 m high. The other well-known and remarkable buildings of Sikri are palace of Jodhabai, Panch

Mahal, Tomb of Saikh Salim Chisti, Diwan-e-aam, Diwan-e-khas and Jyotish Mahal.

Churches of Goa :

The Christian missionaries came to India with the Portuguese to spread Christianity. Goa was the capital of the Portuguese. Many churches were built in Goa like church of Besalika of Bom Jesus and Besalika of God Jesus are in old Goa. The relics of St. Francis Xavier is kept in a coffin in a church of Goa. His dead body has not decayed even after so many years. Beside there are many churches in Goa. It is well renowned for its beautiful beaches and its artistic churches.



6.8 Besalika of Bom Jesus Church-Goa

Champaner :



6.9 Jama masjid-Champaner

Champaner is situated in the foot hills of Pavagadh at Halol taluka in Panchmahal district of Gujarat. After the victory of Champaner, Mahmud Begada gave it the position of capital and named it Muhammadabad. Moti Masjid, Jama Masjid and Historical fort are different buildings in Champaner. Considering art of architecture and historical importance of Champaner, UNESCO has declared this town as a site of world heritage.

Places (Monuments) of Cultural Heritage of Gujarat :

Gujarat has the foremost place in the field of sculpture and architecture. Many beautiful architectural sites can be seen here for eg. cave architectures, temples, forts, vav (step-wells), archs etc. Now let us know about the places of cultural heritage of Gujarat.

Dholaveera and Lothal :

Dholaveera and Lothal were the main cities of Indus Valley civilization. Dholaveera is situated in Khadirbet at Bhachau taluka in Kuchchh district.

Dholaveera is known for its ideal town planning whereas Harappan culture was renowned as a centre of trade and commerce. 5000 years ago from today, bead making factories and ornament making shell were found out from at Dholaveera.

Lothal : Lothal is situated near Ahmedabad-Bhavnagar highway is an architectural place, which was main centre of trade and commerce and well facilitated port of Harappan culture in the ancient times.



6.10 Tomb of Bahauddin Vazir's

Junagadh :

In Junagadh, stone inscription of Ashoka, Buddhist caves of Khapra Kodiya, Vav (Step-well), old Rajmahal, Navghan Well, tomb of Mahabatkhan and Tomb of Bahauddin Vazir's etc. places are worth seeing. Bhavnath fair is held in the foot hills of Girnar on Mahashivratri.



6.11 Sidi Saiyed Grill

Ahmedabad :

Ahmedabad could be known as a historical city. Fort of Bhadra, Jama Masjid, Mosque of Queen Sipri, Roza of Sarkhej, Kankariya Lake, Shaking Minaret (Jhulta-Minara), Sidi Saiyed Jali (Grill), Temples of Hathi Sinh, Mosque of Queen Roopmati are worth seeing architectures of Ahmedabad. The shaking Minarets outside Sarangpur darwaza in Raipur-Gomtipur are well known for its unsolved secret of vibration. The Sidi-Saiyed Grill is famous for its vegetational and geometrical creation and minute carving.

Patan (North Gujarat) :

Sahastralinga lake in Patan, step-well of Queen (Rani ni vav) and Rudra Mahalaya of Siddhapur are worth seeing architectures. The ruins of Rudra Mahalaya in Siddhpur suggests the grandeur of palace which is situated 26 km away from Patan.



6.12 Step-well of Queen (Rani ni vav)

Udaymati, queen of Bhimdev-I built vav (step-well to cater the need of water to her subjects (public) which is known as step-well of queen (Rani ni vav). UNESCO included this vav as a world heritage monument in 2014. This vav indicates the beautiful arrangement of water harvesting for public usage in ancient time. Siddhraj Jaysingh built a lake named Sahastralinga lake in 1140 A.D.

Apart from the fort at Vadnagar, Sharmishta lake and Kirti Arches are worth seeing monuments. Arches are created on the two erected pillars; creating shape like bow. Shamlaji Temple situated on the bank of Meshwo river is an ancient place for pilgrimages. This art of architecture is marvelous.



6.13 Places of National Heritage

Many Stupas and Viharas were built in Gujarat during Kshatrap period. The remains of Buddhist Stupas are found from Bordevi of Junagadh district, Dev ni mori near Shamlaji, Intva stupa in Girnar near Junagadh etc. Besides these many other architectures of Dev ni mori Bavapyara, Uparkot, Khapra Kodiya, Khambhaliya, Talaja, Sana, Dhank, Jhinjhurihar, Kadiya Dungar etc. are seen in Gujarat.

Things to know :

Vav is a well with steps having one, two, three or four openings and three, six, nine or twelve floors. Nanda, Bhadra, Jaya and Vijaya are the main types of vav.

Step-well of Adalaj near Gandhinagar, Step-well of Queen of Patan, Adi-Kadi step-well at Junagadh, apart from this Nadiad, Mehmedabad, Umrath, Kapadwanj, Vadhwan and Kaleshwari (Mahisagar district) etc. are the examples of Vav Architecture.

There are many Jain temples on Shetrunjya mountains at Palitana in Bhavnagar district. Few of the temples were built in 11th century. Taranga Pilgrim is situated on the hills near Timba village at Kheralu taluka in Mehsana district. The temple of Taramati is also situated here. Somnath temple at Gir Somnath district and Dwarkadhish temple of Devbhoomi, Dwarka has gorgeous historical heritage. The list of Gujarat's cultural heritage has not been completed yet. Many such places are there in Gujarat which makes our cultural heritage rich and prosperous.

South Indian Temples of Ancient India : Temples of South India are famous for their different style. They were made in Dravid Style of art. They are in Pyramidal shaped with multistoreys. One attractive stone is placed on its top.

Yard of temple was very huge. Many South Indian temples built in ancient time are as given below :

Name of Temple	Place
Mahabalipuram	Mahabalipuram-Tamilnadu
Kailash Temple	Kanchipuram-Tamilnadu
Bruhdeswar Temple	Tanjavur-Tamilnadu
Virupaksha Temple	Pattadakal-Karnataka
Parashurameshwar Temple	Bhuvneshwar-Odisha
Vaikuntha Perumal Temple	Kanchipuram-Tamilnadu

Places of Pilgrimages in India :

India has been a land of pilgrimages since ancient time. People of India go on pilgrimages. The journey of chardham and twelve jyotirlingas includes Badrinath (Uttarakhand), Rameshwar (Tamilnadu), Dwarka (Gujarat), Jagannathpuri (Odisha). Moreover pilgrimage of 51 Shaktipeeths and Amarnath yatra are considered as one of the most important.

Girnar (Lili Parikrama), Shetrunjya Pradakshina and Narmada Pradakshina have great importance. India is a treasure house of rich cultural heritage. In this way places of Indian cultural heritage gave India a unique identity in the world. The tourists from India and abroad visit Indian art of architecture regularly. This accelerates economical benefits of accelerated economical benefit of tourism industry in India. Thus 32 monuments of Indian cultural and natural heritage have been included in the world heritage site by the UNESCO.

Exercise

1. Answer the following questions in detail :

- (1) Describe architectural style of Taj Mahal.
- (2) Write a note on the places of cultural heritage of Gujarat.
- (3) Write a note on the Red Fort of Delhi.

2. Answer the following questions pointwise :

- (1) Explain art of architecture of Hampi.
- (2) Write about Khajuraho Temples.
- (3) Write a note on the Sun Temple of Konark.
- (4) Write about Bruhdeswar Temple.
- (5) Write a note on Fatehpur Sikri.

3. Answer the following questions in short :

- (1) Write a brief note on the Kailash Temple at Ellora.
- (2) Write a brief note on elephanta caves.
- (3) Write a short note on Qutub Minar.
- (4) Write a short note on the cathedrals (churches) of Goa.
- (5) Make a list of the places (monuments) of Cultural heritage of Gujarat.
- (6) India has been a land of pilgrimages since ancient time. Explain the statement.

4. Choose a correct option from the options given below :

- (1) In which state are Ajanta caves located ?
(A) Madhya pradesh (B) Maharashtra (C) Odisha (D) Gujarat
- (2) Which is not a correct statement ?
(A) Kailash temple is located at Ellora caves.
(B) There are 34 caves in Ellora.
(C) Hindu caves were built during Rashtrakuta dynasty.
(D) Ellora caves are divided into four sections.

(3) Match the pairs and choose the correct order.

Temple				State			
(1) Sun Temple of Konark				(A) Madhya Pradesh			
(2) Virupaksha Temple, Pattadakal				(B) Tamilnadu			
(3) Bruhadeshwar Temple				(C) Karnataka			
(4) Khajuraho Temple				(D) Orissa			
(A) 1-D	2-C	3-B	4-A	(B) 1-C	2-D	3-A	4-B
(C) 1-C	2-D	3-B	4-A	(D) 1-C	2-B	3-D	4-A

(4) Taj Mahal : Shahajahan ; Tomb of Humayun :

(A) Jahangir (B) Shahajahan (C) Babar (D) Akbar

(5) Who founded city named Fatehpur Sikri ?

(A) Humayun (B) Shahjahan (C) Babar (D) Akbar

(6) Which is the correct option if we arrange these historical places of India in the sequence, from North to South.

- (A) Taj Mahal, Khajuraho, Bruhadeshwar, Ellora
 (B) Ellora caves, Taj Mahal, Khajuraho, Bruhadeshwar
 (C) Taj Mahal, Bruhadeshwar, Khajuraho, Ellora
 (D) Taj Mahal, Khajuraho, Ellora, Bruhadeshwar

(7) Join the given pair and find out the correct pair.

Temple				State			
(1) Uparkot				(A) Ahmedabad			
(2) Sidi Saiyad Grill				(B) Patan			
(3) Step-well of Queen Sipri				(C) Khadirbet			
(4) Dholaveera				(D) Junagadh			
(A) 1-D	2-C	3-B	4-A	(B) 1-D	2-A	3-B	4-C
(C) 1-C	2-D	3-B	4-A	(D) 1-C	2-B	3-D	4-A

(8) Which is not a type of step-well ?

(A) Nanda (B) Bhadra (C) Tada (D) Vijaya

Activity

- Show the places of Indian cultural heritage in the outline map of India.
- Arrange a picnic to the place of heritage in Gujarat.
- Prepare a hand written magazine of the places of Indian Cultural heritage.
- Collect more information about Queen Udaymati

India has a unique place in the world. There has been a remarkable contribution of India in the field of knowledge, science, religion, culture and art. India has a rich and inimitable heritage. Our heritage shows an imperial dignity of ancient India. That is why, we should be committed towards the preservation and conservation of our heritage which is utmost demand of the present time.

Need for the Preservation of Cultural Heritage

The heritage of India is multifarious which brings glory to the nation. Cultural heritage accommodates sculpture, architecture, literature, various arts and natural heritage. Natural and manmade factors are adversely affecting our heritage, hence its preservation is required. Our heritage glorifies the people of our country so they respect our heritage by associating it with their own identity. Therefore, it is necessary to develop positive attitude towards its management. We should preserve vanishing arts and architecture so that upcoming generations can be inspired by the works done by our ancestors. As we are not much aware about the preservation of our heritage and our negligence is chiefly responsible for its degradation, therefore it has become necessary to preserve our heritage.

Necessity of Preservation of Cultural Heritage

Our heritage is the identity of the nation. The country which ignores it does not have any future as heritage is our guide. The errors we have committed in the past can be rectified in the present and we can properly plan for the future. Heritage acts as a guide to decide the direction of our development. Heritage is necessary for the transmission of new consciousness across the country.

It is necessary to bring awareness among the people regarding the damage done to the places of cultural and natural heritage. Not only the government but also the common public should play their vital role for the protection of our heritage. As the heritage is considered as an ideal for the people, it is necessary to cease its degradation. Greater damage has been done to our heritage because of the invasion of foreign tribes and our unawareness. So it is the moral duty of the government as well as of common public to conserve and preserve our heritage.

Tourism industry and our heritage

Various sites of natural and cultural heritage of India have been accommodated in the list of the world heritage by UNESCO. Many people come to visit, to explore and to do research on our heritage from India and other countries. This boosts our tourism and transportation industry. Along with the economic benefits to the concerned states, tourism industry provides appropriate opportunity and proper platform to showcase our multifarious cultural arts and traditions in front of the world.

Apart from this, tourism also provides employment to the local people and this keeps the vanishing art and tradition alive. Now a day tourism as a subject has been added in the field of education which is eventually promoting tourism guide as an independent business. India earns foreign currency from the foreigners. visitors. Introducing a heterogeneous culture, it enlightens the talent of our country at the international level. Facilities like metalled road, railways, water, communication etc are developed around the sites of heritage. Tourism encourages activities like photography, horse riding, boating etc. simultaneously provided employment to street hawkers. Varied culture, indigenous art and their features have got a proper platform for the development.

Preservation of Heritage and measures to conserve

Efforts made for the preservation and conservation of heritage are given below:

- Indian government has constituted the Indian board of wildlife in 1952 to protect our wildlife. It facilitates with material for the conservation of wildlife. It suggests government for the development of national park, bird sanctuary and geological gardens along with the task of creating awareness for protection of wildlife.

- Wildlife Protection Act enacted in 1972 gave a firm status to the national parks, sanctuaries and bio reserves.
- New national parks, wildlife sanctuaries and bio-reserves have been established.
- The laws of our country for the preservation of our heritage have a wide perspective.
- Strict laws have been framed to stop the destruction of vanishing vegetation and wildlife.

Apart from government, there are several societies and organisations which have been actively taking up the task of protection of wild life and environment. The Bombay Natural History Society is the oldest one of its kind and was established in 1883. Presently Gir foundation, Natural club



7.1 Wild life and conservation of environment

hence various protective measures have been taken for the safeguard of heritage.

- Ancient Monuments and Archaeological Sites and Remains Act was enacted in 1958. This act suggests for the preservation of antique artistic work, religious places, historical memorials and archaeological sites etc.
- This Archaeological Act ensures that no person or agency can conduct archaeological excavation without the prior permission of government. This action consequently stopped clandestine excavation, hence many of our heritage sites are still preserved and kept intact.
- The government of India declared some historical places as “National Monuments”. Department of Archaeology is responsible to look after the preservation of these monuments.
- However, these heritage sites will not be preserved just by framing laws but it becomes moral responsibility of every citizen.
- Department of Archaeology maintains sites of heritage which are either destroyed or on the verge of destruction.
- While taking up the work of maintenance of monuments one should keep in the mind that they should be preserved in such a manner so that it retains its original shape, size and condition intact.
- Department of Archaeological Survey of India (ASI) has more than 5000 monuments and sites under its protection. Sangameshwar temple and Papnasham temples in Andhra Pradesh were going to be submerged into the sea due to the construction of NagarjunSagar Multipurpose Project. Therefore, these temples have been successfully shifted to Alampur at Mehboobnagar district of Andhra Pradesh.
- Tajmahal of Agra is one of the Seven Wonders of the World.
- Air pollution caused by Mathura oil refinery and fast growing nearby industries, turned the white

etc. institutions are doing noble work of environmental preservation.

Realizing the importance of the preservation of our heritage, Constitution framers made it mandatory that it should be included in our Constitution.

Ancient Memorials and Archaeological Sites and Remains Act :

- The more dangerous and harmful factors arose in the way of heritage. The more strict actions and efforts were made time to time for preservation,

marble pale and dull. The department of archaeology took suitable steps to close the industries spreading air pollution in its neighborhood. Regular cleaning of the structure has brought back the brightness of the Tajmahal.

Our Role in the Preservation of the Museums :

According to the Indian Treasure Trove Act, 1876, if any citizen suddenly finds any ancient artistic and antique article from a house, field, well, lake, etc. while digging then he has to immediately notify to the officer of archaeological department. With this small effort they can preserve valuable things which could have been lost due to the carelessness. Government has tried to obtain information regarding personal or private museums consisting expensive artistic pieces under the act of 1972.

Systematically archived documents corresponding to each state provides better guidance to the historians and researchers. Museums performs important task of preserving valuable things carefully. The best examples of the museums are given below :

Museums in India

Serial	Name	City	State
1	National Museum	New Delhi	Delhi
2	Indian Museum	Kolkata	West Bengal
3	Chhatrapati Shivaji Maharaj Vastu Museum (Prince of Wales)	Mumbai	Maharashtra
4	Salarganj Museum	Hyderabad	Andhra pradesh
5	Rashtriya Manav Sangrahalaya Pradesh	Bopal	Madhya pradesh
6	Lalbhai Dalpatbhai Museum (L.D. Institute of Indology)	Ahmedabad	Gujarat
7	Shri Mahavir Jain Aradhana Kendra, Koba	Gandhinagar	Gujarat
8	Shri Hemachandracharya Library	Patan	Gujarat
9	Vadodara Museum and Picture Gallery	Vadodara	Gujarat

It is a combined duty of general public and government to generate awareness towards the preservation and the protection of the museums.

Our Role in the Preservation of Heritage :

If the Central and State governments, UNESCO, and NGOs (Non-Government Organizations) are performing their duties to preserve our valuable heritage then as individuals one should play an effective role in that direction. Teachers in the schools and colleges should impart the knowledge of India's glorious heritage. Students as well as common public should gain the knowledge of unfamiliar places, monuments, ancient remains, sites etc. They should help in their preservation and protection. Everyone should take care of these monuments by preparing the list of all heritage sites. Valuable things should not be destroyed, broken or stolen. Schools, colleges and NGOs should conduct programs like visit to the historical places and sites, speeches, exhibitions, discussions, seminars etc. to create awareness towards the preservation of heritage. If the specimen of the architecture, sculpture and historical monuments are destroyed once, it is very difficult to

restore them to the original form. So it is our moral duty that they should not be destroyed and shifted to other place. Our country has rich and unique heritage.

There are many ancient ponds, lakes, wells, step wells, streams, springs etc in different places in our country. We should take special care of Malav lake of Dholka, Rani ni vav of Patan, Well of Champaner, Bhamario Well of Mehemdabad, Navghan well of Junagadh etc , during the monsoon. We should constantly keep an eye on their preservation.

Cleanliness and preservation of picnic spots :

Central and state governments are taking proper steps for the cleanliness and preservation of our picnic spots. Consequently special arrangement has been made for it. Religious, historical places have always been a greater attraction among the local as well as foreign tourists. Henceforth, our government is attentive enough towards its preservation.

- Do not use plastic.
- Do not litter at picnic spots, use dustbin.
- Do not spoil historical monuments either by writing or drawing picture.
- Waste should be properly disposed off.
- Do not spit after eating tobacco or Paan (betel).
- Do not pollute surrounding areas of historical monuments.
- Extensive care should be taken during monsoon of historical monuments which constitutes step-wells, lakes, ponds, streams etc.
- Be cautious while cleaning monuments with archaeological chemical methods.
- Sensitized domestic and foreign visitors to avoid damage of our historical heritage.
- If natural disasters has caused damage to the historical places, make efforts to bring it again to the original form.

It is our responsibility to maintain beauty and cleanliness of tourist places as they bring fame and prosperity to the nation. We should make use of science and technology to maintain the originality of our ancient heritage.

India : Unity in Diversity

Being one of the most ancient civilizations of the world, India has varied and rich cultural heritage. Diversity of India is its unique identity. India has a fine amalgamation of different cast, community, religion, tradition, culture and languages inspite of having variety. Yet, India stands united and undivided. India has proved the feelings of “Vasudhav Kutumbakam”. The whole world is a family. This feeling exists in India since Vedic periods. “Let us get good thoughts and vibrations from all four directions” is the message of Rig Veda’s, which showcases the grandeur and glory of Indian culture. India has spread religious tolerance and secularism across the world.



7.2 Unity in Diversity

Swami Vivekananda said the following words in the “World Religious Conference” which was held in Chicago (US). “I am proud to say that, I represent the religion that has taught the lessons of tolerance, compassion and universal fraternity to the world.”

India is a secular country. India is a land of multi-religious; influence of Hinduism, Islamism, Buddhism, Jainism, Christianity etc. is seen in Indian culture.

Therefore, the torch bearers named our country as “Bharat Varsha” by stressing on its unity, which reflects upon our broad outlook. Holy names of 7 sacred rivers have been used in our prayers. People including great sages, Sufi saints, Swami Vivekananda, Dayanand Saraswati and Mahatma Gandhi always stressed upon peace, co-ordination and universal brotherhood.

Unity in diversity is the unique feature of Indian culture. As at the end of the day, all the rivers amalgamate into the great ocean, equivalently our country conglomerates different religions, castes, languages, traditions, creed, customs and festivals. The people of India live their life with the feelings of co-existence. The people of India have conserved this quality and have wonderfully enhanced it.

Exercise

1. Answer the following questions in detail :

- (1) Why should we preserve and conserve our heritage ?
- (2) Mention the steps taken for the preservation of the heritage.
- (3) Explain our role in the preservation of our heritage.
- (4) Write about the acts which has been passed to preserve ancient monuments and archaeological sites and remains.

2. Answer the following questions point wise :

- (1) Explain the importance to preserve and conserve our heritage.
- (2) Write a note on the preservation of Museums.
- (3) What precautions should be taken while taking up the work of maintenance of monuments ?
- (4) Write your views regarding cleanliness and preservation of tourists spots.
- (5) Write a note on “Unity in Diversity in India”.

3. Answer the following questions in short :

- (1) Describe the advantages of tourism industry.
- (2) In what different ways do people spoil/damage our heritage ?
- (3) When was 'Bombay Natural Society' established ? What are its functions ?
- (4) Which functions are formed by ‘Departments of Indian Archaeological Survey’?
- (5) What did Swami Vivekananda say about religion in the “World Religious Conference”?

4. Choose the correct answer from the following option :

(1) Match the following in correct sequences :

- | | |
|--|--|
| (1) Shri Hemchandracharya Library | (A) Mumbai |
| (2) Indian Museum | (B) Bhopal |
| (3) Chhatrapati Shivaji Maharaj Museum | (C) Patan |
| (4) Rashtriya Manav Sangrahalaya | (D) Kolkata |
| (A) (1 - C), (2 - D), (3 - A), (4 - B) | (B) (1 - A), (2 - B), (3 - D), (4 - C) |
| (C) (2 - A), (4 - C), (1 - B), (3 - D) | (D) (4 - B), (1 - D), (3 - C), (2 - A) |

(2) Which of the following statements is not correct ?

- (A) India proved the feeling of “Vasudhav Kutumbakam” in the world.
- (B) “I am proud to say that, I represent the religion that has taught the lesson of compassion and brotherhood, to the world!” - Swami Vivekanand.
- (C) Indian who believed in tolerance and universal brotherhood even welcomed Dutch and Britishers.
- (D) Ancient Indian Torch bearers stressed upon economic unity of India.

(3) Why did the white marble of Taj Mahal turned pale and dull ?

- (A) Land Pollution (B) Water Pollution (C) Air Pollution (D) Noise Pollution

Activities

- Make a project on any one historical place related to cultural heritage and put into school's library.
- Arrange tour to the historical places, museums, national parks and prepare hand written report with photographs.
- Collect photographs of world historical places through internet and prepare album. Conduct competition for best picture and give certificate/prize to the winner.
- Collect information related to world heritage from school library and arrange class-room discussion.
- Visit a Museum during your educational tour.

Human needs can be satisfied partially or completely through resources. There are thousands of elements in the nature but we can not call all of them resources. These elements can be called resources only when these are utilised by man through his special knowledge and expertise. In other words, the things on which the man is dependent, human needs can be fulfilled by them and man has the physical and intellectual capacity to utilise them can be called as resources. In this way, any thing which is used to fulfill the human needs becomes a resource. In ancient times, man did not know about the minerals buried within the land, so these were not the resources at that time, but today these are extremely useful due to their utility and the developed techniques of mining. The natural resources should have both the virtues of utility and capability to work. The resources are made of the interactions of the three, i.e. Nature, man and the culture.

Uses of resources

Resources are useful to us in many ways. We learn about its role gradually at every stage of human life. All activities from agriculture to industries ultimately depend on natural resources. Let us know more about it.

Resource - as food

Various food requirements of man are complied by various resources. Fruits grown naturally, various crops obtained through agriculture, milk and its products and meat obtained through domestic animals, fish and other aquatic animals from reservoirs, honey prepared by honey-bees etc. are used as food items.

Resource - as a source of raw material

Various goods obtained from forests, agro-products, wool, hides and meat available from animals, mineral ores etc. form the raw material for many industries.

Resources - as energy resources

We use coal, petroleum, natural gas etc. as fuel in industries as well as domestic fuel. Besides, energy can be generated through solar insolation, wind, sea waves, tides and ebbs and waterfalls etc.

Types of resources

Resources are classified as follows :

(1) On the basis of ownership (2) On the basis of re-availability (3) On the basis of distribution centres

Following are the types of resources on the basis of ownership. Let us understand this through the table :

Sr. No.	Ownership	Details	Examples
1.	Individual Resource	Owned by an individual or a family	Land, building etc.
2.	National Resource	Owned by a country or a region	Army, International trade
3.	Global Resource	All physical or non-physical resource which are used for human welfare	Resources of common ownership of all nations of the world

Resources can be classified as follows on the basis of their distribution.

Sr. No.	According to distribution area	Details	Examples
1.	Universal resources	Useful gases in the atmosphere	Oxygen, nitrogen
2.	Generally available resources	Easily available	Land, Soil, Water, Pasture land
3.	Rare resources	Those available at limited places	Minerals like coal, petroleum, copper, gold, uranium etc
4.	Solitary resources	Minerals available only at one or two places in the world	Chryolite, which is available only in Greenland

You could understand details of two types. Resources can be classified by other methods also, wherein these can be classified into two types as renewable and non-renewable resources. Some resources reproduce themselves as per their usage during a specific time, in other words these are inexhaustible. Solar insolation, wind, birds, animals, Bioresources etc. fall under this category. These are called renewable resources. Non-renewable resources are those which can not be re-used once they are used or they can not be reproduced or can not be reformed in near future. Mineral, coal, natural gas, petroleum etc. are included in its category.

Planning and conservation of Resources

Human needs are unlimited while the resources are limited. During last one hundred years, usage of the resources has increased very much due to the extraordinary development in science and technology and due to population explosion. Severe implications will have to be experienced in future if a serious thought is not given to this matter. So, it is the duty of all of us to conserve resources for the future generations. Resources should be conserved and should be used rationally.

The word conservation is directly related to the scarcity of resources. If the resources are exploited at the current rate where they are exploited haphazardly and irrationally then it will be a dream to maintain the development and the current life style. It includes things like its rational usage, its conservation and re-usage. When there is a danger of existence on the life of a tree or a human life, the arrangement made for it is called its conservation.

Let us understand about the planning and the conservation of resources in details.

- First of all, gather information about the availability of utilised, unutilised and probable resources of any region or a country as a unit.
- The resources, which are limited or non-renewable, should be exploited scientifically and should be used only where it is necessary to use them.
- Attempts should be made to develop those resources the quantity of which can be increased.
- The resources which are cheaper and are easily available should not be wasted, but instead they should be used sparingly for future use.

- Those resources which are in limited quantity should be conserved. Finding its alternative option through technical development is favourable in long term.
- Necessary laws should be formed for the conservation of resources and should be enforced strictly.
- Citizen should be well acquainted with all facts associated with the rational usage of resources and a public awareness should be cultivated.

Soil formation :

Generally the part of the surface of the earth wherein the vegetation grows is known as 'Soil'. The soil is a thin layer composed of various elements on the surface of the earth. Minerals, humidity, humus and air are mixed up in it. The parental rocks lie below the soil. Soil is formed due to the material available through the denudation. Biotic remnants, humidity and air get mixed up with it. In other words, the soil is a natural mixture of minerals and biotic elements which have the capacity to grow and develop vegetation.

Soil

The uppermost layer of the crust of the earth is called soil which contains minerals and biotic elements necessary for the growth and development of vegetation. Although, their proportion is not the same everywhere. Thus soil is the layer or the surface of the matter formed due to the mixture of the scattered material of the parental rocks and vegetation. Factors of denudation prepare very thin layer through the denudation of rocks. The humus formed due to the disintegration or decay of vegetation or insects is added to this. This biotic elements play an important role in the development of vegetation.

The climatic impact in the duration of soil formation is so important and widespread that the soil formed of different types of rocks in that region over a long time is the same. So, the soil formed out of the same parental rocks under different climatic influence is different. Soils are classified on the basis of their colour, climate, parental rocks, structure, humus etc.

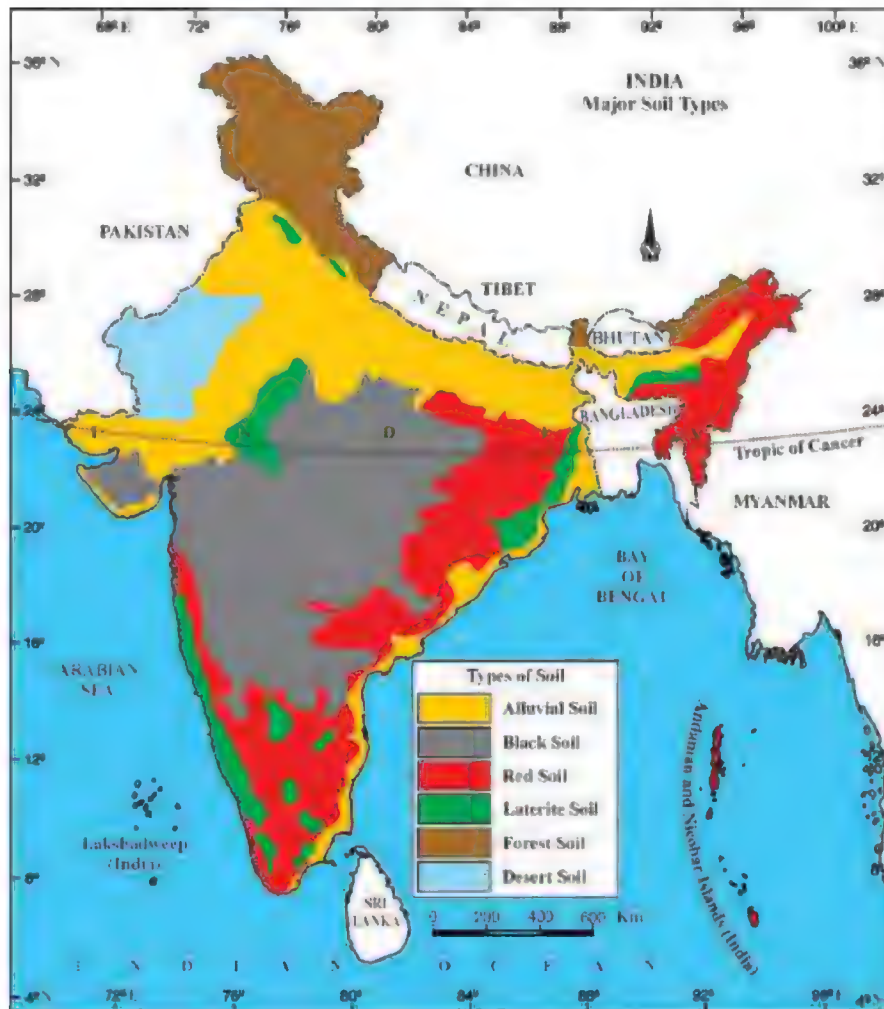
Types of Soil :

Recently, Indian Council of Agricultural Research (ICAR) has divided the soils of India into 8 types. Of these, the Mountain Soil and forest soil are found at different altitude in mountainous regions.

- (1) Alluvial Soil
- (2) Red Soil
- (3) Black Soil
- (4) Laterite Soil
- (5) Desert Soil
- (6) Mountain Soil
- (7) Forest Soil
- (8) Marshy or Peaty Soil

(1) Alluvial Soil : This type of soil is spread over about 43% of the total area of India. This soil is found in the northern plain from the Brahmaputra valley in the east upto Satluj in the west and in the

delta regions of Mahanadi, Godavari, Krishna and Kaveri rivers. The formation of alluvial soil is due to the alluvial deposition by the rivers. There is more proportion of potash, phosphoric acid and limestone in this soil and there is less proportion of nitrogen and humus. If pulses are grown in this soil, the nitrogen content can be stabilised. Crops like wheat, paddy, sugarcane, jute, cotton, maize, oil seeds etc. can be grown in this soil.



8.1 Major Soil Types of India

(2) Red Soil : It occupies about 19% of the total land of India. It is spread from Tamil Nadu in the peninsular India upto Bundelkhand in the north, and from Rajmahal Hills in the east upto Kachchh in the west. Such soil is found in some parts of Rajasthan. The soil is red in colour due to the presence of ferric oxide. and it becomes yellow as we go down. Lime, gravel and carbonate are not found in this soil. There is a deficiency of lime, magnesium, phosphet, nitrogen and potash in this soil. Crops like millet, cotton, wheat, jowar, linseed, groundnut, potato etc. are grown in this soil.



8.2 Red Soil

(3) Black Soil : Black or Regur soil covers about 15 % of the total area of India. This soil was formed due to the spreading of Deccan lava. Such soil is found in entire Maharashtra, Western Madhya Pradesh, Andhra Pradesh, and certain part of Karnataka. In Gujarat Surat, Bharuch, Narmada, Vadodara, Tapi and Dang districts have this type of soil. Lava rocks and climate play an important role in the formation of such soil. There is



8.3 Black Soil

more proportion of iron, lime, calcium, potash, aluminium and magnesium carbonates in this type of soil. It is considered to be quite fertile. This soil also has the capacity of retaining more moisture. Whenever the moisture dries up, they develop fissures. Crops like cotton, linseed, mustard, groundnut, tobacco and udad are grown in this soil. As it is more suitable to the cotton, the soil is also known as Black Cotton soil.

(4) Laterite Soil : The name “Laterite” is derived from the latin word “Later” which means a brick. Its red colour is due to the iron oxide. When this soil becomes wet, it becomes smooth like butter and when it is dry, it becomes very hard. It is formed due to the change of dry and moist climate and due to the prevention of silica based material. This soil has developed in the higher area of peninsular plateau of India. The soil contains more of iron, potash and aluminium. The soil is less fertile, but cotton, paddy, ragi, sugarcane, tea, coffeee, cashew etc. can be grown after using fertilizers.

(5) Desert Soil : This type of soil is seen in the area where the climate is arid or semi arid. The soil is sandy and infertile. It contains more dissolved minerals. Rajasthan, Haryana and Southern Punjab have this type of soil. In Gujarat, this type of soil is found in Kachchh and some parts of Saurashtra. With irrigation facilities, crops like millet and jowar can be cultivated in this soil.

(6) Mountain Soil : This type of soil is found in the valley and sloppy regions of Himalayas at an altitude of about 2700 to 3000 metres. Its layer is very thin and is underdeveloped. This soil is found in Assam, Darjeeling, Uttarakhand, Himachal Pradesh and Kashmir. In Himalayas, the soil is found at a general altitude in the regions of pine and chid trees.

(7) Forest Soil : This type of soil is found within the altitude between 3000 metres to 3100 metres in the coniferous forests of Himalayas, Sahyadri, Eastern Ghats and the Terai region of Himalayas. The surface of the earth is covered by the shaded leaves of the trees and the upper part of the land becomes black due to the increase in the humus caused due to the decaying leaves. It changes into blue or red colour while going down within the land. Besides tea, coffee, spices, other crops like wheat, maize, barley, paddy etc. are also taken. The soil is found in limited area.

(8) Marshy or Peaty Soil : This Type of soil develops in humid regions due to the accumulation of biotic elements. During rainy season, this land is submerged under water and when the water recedes, paddy can be grown in it. There is an excess of biotic elements and minerals in such soil, but it shows insufficiency in phosphate and potash. Such soil is found in Odisha, West Bengal, Coastal Tamil Nadu, Central area of Northern Bihar and in Almoda district of Uttarakhand. The soil has very limited extent.

Soil Erosion :

Erosion means the transportation of land particles from one place to another with the help of moving air and water. In other words, the faster transportation of the particles of the surface land to other place by natural forces. It takes many years to form the upper layer. If the soil particles are carried away because of heavy rain or by stormy wind, the agricultural production decreases. It is extremely necessary to maintain this upper layer for agriculture. So the Soil erosion should be prevented.



8.4 Soil Erosion

Measures to prevent soil erosion

- Control the grazing activity on the land.
- Plantation should be carried out in contour method in sloppy regions.
- Plant trees in fallow land.
- Construct check dams where there are streams.
- Cultivate very deeply in the field to reduce the speed of the water.

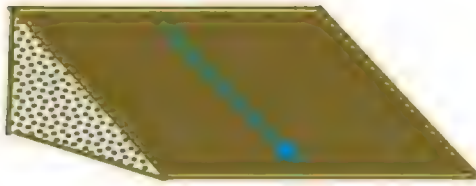


8.5 Check Dam

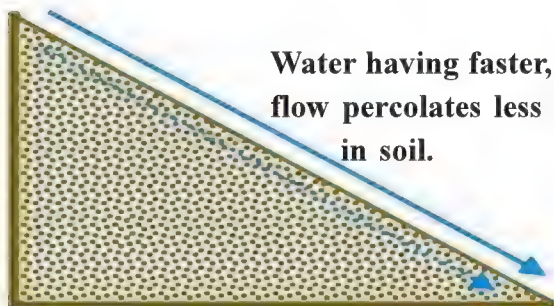
Soil Conservation

Soil conservation means to prevent the soil erosion and to maintain its quality. Soil conservation is directly connected to retain the soil particles at their original place. Different remedies are used at different places in the world according to its location and problems. If the soil is not conserved

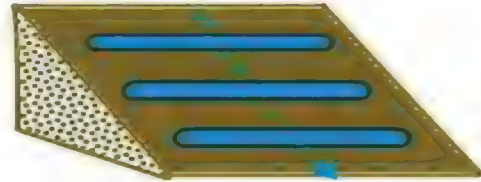
Surface run off water



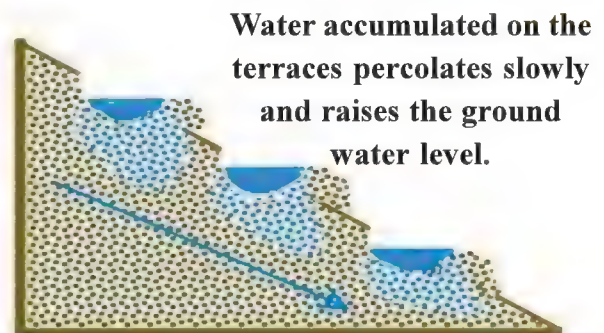
flows faster over the slopes.



Water harvesting in the terraced slopes
Most of the water is stored therein.



(store a big amount of water)



Water accumulated on the terraces percolates slowly and raises the ground water level.

8.6 Methods of Soil Conservation

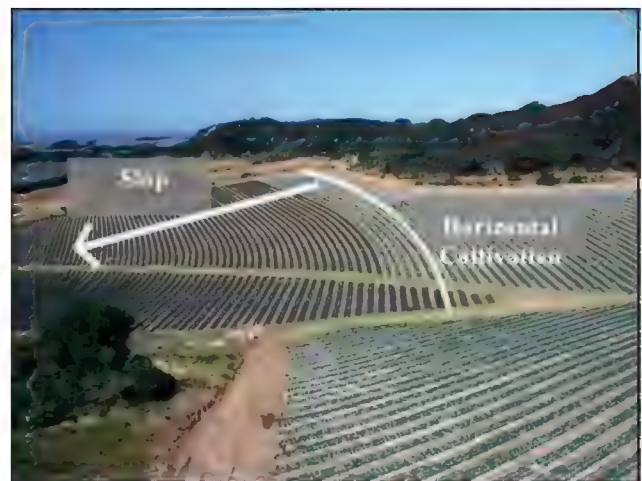
then there are chances of floods which enhances the risk against lives and property. Thus, soil conservations is very much necessary.

Remedies of soil conservation :

- The roots of the trees in forest cover hold up the soil particles.
- Plant trees in the rivers gorges and on mountain slopes.
- A series of trees should be grown near a desert region to prevent the winds with more velocity. It will stop the advancing desert.
- The river floods should be controlled by diverting their flow in other rivers or in dry river beds.
- The unrestricted pasturing loosens the soil layer on the mountains, it should be prevented.



8.7 Terraced Farms



8.8 Horizontal Cultivation

- Methods like horisontal cultivation, terraced farms etc. should be implemented.
- Humus contents should be added to the soil which has lost its fertility.

By implementing these remedies, soil can be conserved. The conservation of soil is a strong necessity today. Government, society and the people should work together for its conservation.

Exercise

1. Answer the following questions in details :

- (1) What is meant by resource? Describe its usages.
- (2) What is meant by soil conservation? State the remedies of soil conservation.

2. Answer the following questions as directed :

- (1) Describe the process of soil formation and state on which basis these are classified ?
- (2) Write notes on Alluvial soil.
- (3) Write notes on Black soil.

3. Answer the following questions in brief :

- (1) State the remedies to prevent soil erosion.
- (2) What is called as Mountain soil ?
- (3) Write short note about the desert soil.

4. Select the correct option and write answer :

- (1) The resource available at one or two places in the world
 (A) Universal resource (B) Common available resource
 (C) Rare resource (D) Solitary resource
- (2) Soil formation takes place due to elements of parental rocks.
 (A) Weathering and erosion (B) Transportation and stagnancy
 (C) Sequence and non-sequence (D) Vertical and headwards
- (3) Which is the other name of Padkhau soil ?
 (A) Alluvial soil (B) Laterite soil (C) Black soil (D) Red soil
- (4) Recently the soils of India are classified into types by Indian Council for Agricultural Research (ICAR).
 (A) Seven (B) Sixteen (C) Five (D) Eight

Activity

- Arrange a field trip of the area facing the problem of soil erosion near your village or town under the guidance of your teacher.
- Observe soils of different regions during your tour.
- Know from the parents about the types of soil near your village or the town.
- Know about new things from the following websites under the direction of your teacher or parents and present them in the prayer meeting or the class.
 (i) www.omaf.gov.on.ca (ii) www.f.panda.org

The existence, progress and development of man is dependent on resources. We have been fulfilling our needs by getting them from nature since early times, wherein the forests are considered to be very important resources. A general meaning of forest is the accumulation of trees, scrubs or heaps of grass. In natural vegetation, only that vegetation is included which can be raised naturally without the help of man. This is called virgin vegetation. Now such vegetation in India is available only in Himalayas, Sundervan and remote areas of Thar desert.

Classification of Forests

Forest classification is made according to different criteria. You have studied the classification of forests on the basis of climate in standard 9. Here, we will know about three types of forests on the basis of administration, ownership and management.

Types of forests according to administration

(1) Reserved Forests : Such forests are under the control of the Government directly. Here, there is restriction on lumbering, collection of woods or for pasturing.

(2) Protected Forests : These forests are looked after by the Administration. Local people are permitted to collect the wood and to graze their animals without causing any harm to the trees.

(3) Unclassified Forests : These forests are still not classified. There is no restriction on tree felling or animal grazing.

Classification of forests according to ownership, administration and management

The forests of India are classified into three types on the basis of ownership, administration and management aspects.

(1) State Forest : Central or State Government controls such forests. Most of the forests of the country fall under this category.

(2) Communal(community) Forest : Local Self Government institutions (Gram Panchayat, Municipalities, Corporations, District Panchayat) have control over such forests.

(3) Private Forest : Such a forest is owned by individuals. Such forests are found more in Odisha, Meghalaya, Punjab and Himachal Pradesh. Some of the these forests are in hapazard condition or some of them are totally barren.

Deforestation

Deforestation means the destruction of forests. This is not a problem of our country alone but is one of the global problems. It can be said that it is result of the progress of man. Trees are destroyed naturally. However, it is negligible compared to the loss inflicted by human interference.

Impact of deforestation

The impact of deforestation is widespread. The quantity of carbon dioxide increases in the atmosphere. Green house effects become more intense. With the removed forest cover the soil is eroded and the problem of farm fertility decreases. In the of peninsular India, the forest area has decreased largely due to deforestation. Many living organisms have lost their abodes. As a result the wild animals approach urban

settlements in search of food and water. More instances are recorded of carnivorous animals killing the domestic animals of those shepherds who live near the forests.

Remedies for Forest Conservation

- Research should be carried out to find the option of wood. This will reduce the usage of wood and it will save the forests. Wherever the trees are to be cut inevitably for the development work or for necessity, new trees of the same species should be grown. There should be a total ban for cutting trees which are not grown fully.
- Those industries which receive their raw material from the forests should be compelled for afforestation for future needs. Under the name of Eco-tourism, the forest cover should not be damaged and should be strictly controlled.
- Widespread public awareness programmes should be organised among the local people.
- The importance of forest and their conservation strategies should be included in the syllabus of schools and colleges. They should explain the necessity of forest conservation.
- Social forestry and Agro-forestry should be developed intensively by taking planned steps for the necessity of fodder and firewood.
- In place of firewood, alternative options like solar energy, natural gas etc. should be implemented.
- Forest resources should be used sparingly. In order to make the process of tree growth faster and healthier, infested trees should be removed. Forest fire causes heavy damage to forests. A separate system or a force at national level should be created for dousing the fire.
- Due to the increased means of transportation and easy travel thousands of pilgrims reach the religious places in forested area to attend the bhandara, fairs or the parikamma (circular travel). At that time, the litter should be cleared properly, otherwise the forests are polluted.
- An area should be demarcated and reserved for animal pasture.

Wildlife diversity

There is a large diversity in climate and physiography in India. Due to this geographical diversity, a large variation is seen among the insects, birds, animals and vegetation. There are about 15 lakh species of animals-birds in the world. Out of these, 81251 species are found in India. India stands 12th in the world in terms of bio-diversity. Animals from Asia, Europe and Africa are seen in India. African zarakh, European wolf, wild goats and Kashmiri deer, elephants and gibbons from South-East Asia etc. are found here. The bio-diversity of India includes black bear, one horned rhino, deer, different types of snakes, peacock, ghorad (bustard), hawk, king fisher, flamingo etc. The snow leopard in Himalayas and the Red panda found at the same altitude are distinguished animals here. Currently, India is the only country in the world where tiger and lion are seen moving in their natural abodes. During winter, migratory birds from distant places throng into the watershed area of Keoladev National Park, Bharatpur (Rajasthan) and Nal Sarovar in Gujarat to spend winter.

Sea turtles come to lay eggs along the sandy coasts of Odisha. Indian python, various snakes and the King cobra are found in the southern rain forests.

Wild life on extinction

Today many wild animals in the world are on the verge of extinction. Tigers were found throughout India during last century. Tigers were seen in the forests of Idar, Ambaji and Danta. Today, tigers are totally extinct from Gujarat forest areas. Cheetah is also becoming extinct from Indian forests. Many bird species which

were very easily seen in Indian forests are now hardly seen. Some of them like vulture, duck with pink throat, cranes and owls are on the verge of extinction. Chilothro bird, once widespread in Arunachal of North-East is not seen so easily. There is a danger of survival to the alligators of the fresh waters of rivers and Ganga River Dolphin. The number of sea turtles approaching the coasts of Odisha and Gujarat is constantly decreasing. Water-fowl (Jalbiladi) once found frequently in Narmada, Tapi, Mahi and Sabarmati rivers of Gujarat is almost extinct. A time has come for us to think about this seriously.

Reasons for the destruction of wildlife

- Due to the human interference in grasslands and in watershed area of the forests, the natural habitat of the wild animals is put in danger.



9.1 Hunting to Satisfy Hobbies

- Destruction of forests is the main reason responsible for natural imbalance. Its final impact is the reduction in the number of wild animals.
- Hunting the animals to obtain hair, skin(hide), bones, horns or nails is also responsible.
- The over exploitation of forests made by man for his greedy motives, such as roads, multi-purpose projects, mining minerals, expansion of new settlements or cities etc. displace the wild animals.

- Forestlands are being encroached for grass, fuel or for grazing. The forest fire engulfs many species. When the forest fire occurs at the time of rearing the young ones of the birds or hatching the eggs, it creates a negative impact on the number of wild animals.
- Due to the loss of their natural habitats many animals without any abode come into conflict with man and sometimes even lose their lives.
- Hunting to procure bio-medicine or things which make perfume also bring the species on the verge of extinction.

Things to know



Red Panda : Red Panda is found in the cold forests of eastern Himalayas. His food is bamboo sprouts, eggs, small birds, insects etc. It is less active during the day. Besides India, it is also found in China, Nepal, Bhutan, Myanmar.

Measures of preservation of wild life

- It is necessary to change our attitude and perception towards the forests. We consider it as a source of unlimited income, which is a mistake. It must be preserved. Only then the natural habitats for wild life can be saved.
- Maintain the balance of number between the herbivores and the carnivores in the forests. For this, steps like maintaining the water sources in the forests and restriction on grazing of domestic animals should be taken.

- There should be strict laws to ban hunting. Those laws should be implemented very harshly. Heavy punishment should be inflicted for illegal mining in forest area and a fine should be imposed.
- It is necessary to make such arrangements which would not disturb the animals during their procreative period.
- A study should be made about the likely effects of fisheries, forest gatherings or tourism in the forests and steps should be taken accordingly.
- Programmes should be arranged to bring widespread awareness in the society.
- If the wild life protection force is inactive, then pressure should be brought on them and this work should be given priority.

Things to know



Ganga River Dolphin (Platanista Gangetica)

: This Ganga River Dolphin found in river Brahmaputra and Ganga is a fresh water species. Generally, it lives in the river having deep and calm water flow. It is found in the Ganga river which flows through one of the densely populated regions of the world. Due to the release of dirty water in the river, sedimentation due to deforestation, fisheries,

navigation in the river, industrial waste etc. danger has been created against its existence. Apart from Ganga and Brahmaputra rivers, there are few such dolphins left in Chambal river. It comes to the surface very often to breathe making Suu-Suu like sound. So it is also known by other names like Sauns, Susu or Suis. It is also found in the rivers of our neighbours Nepal and Bangladesh. At present, the existence of Ganga River Dolphin is in danger.

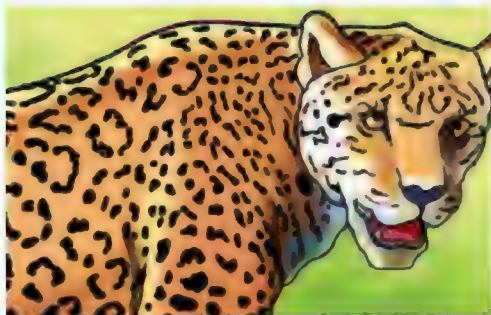
Wild Life Protection Scheme

Some schemes are implemented in India to protect the wild life. Under these schemes, some projects are started for those animal species which are in danger or which are likely to be extinct in near future. Let us know about some of these projects in brief.

1. Tiger Project : As per one estimate, there were more than 40,000 tigers in India in the beginning of 20th century. Due to unrestricted illegal hunting and deforestation there was a big danger for the existence of tigers. In such circumstances, this project to save tigers was started in 1971. Under the project, a series of steps are taken to keep their natural habitat protected and to maintain ecological balance at national level. Till now this project is implemented in about 44 regions.



Things to know



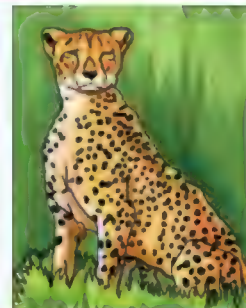
Leopard :

- Leopard belongs to cat family. It holds smaller stature compared to lion and tiger.
- It is found everywhere in India. It is also found in dark black colour.
- It is found in large number in the forests of Gujarat.
- It often comes to human settlements. People unknowingly call it Cheetah also.

Things to know :

Cheetah :

- It is totally extinct from the forests in India.
- Today, it is found in Africa in its natural habitat.
- In India, it is found in a captive state only (Zoo).



2. Elephant Project : This project was started in 1992. Its main objective was to provide the elephants protection in their natural habitats and to protect habitats and their migratory corridors. Today there are about 26 protection zones for elephants in the country. After the implementation of this project, there has been an increase in the number of elephants in the forests. Besides this Project also works for the maintenance of domesticated elephants.

3. Rhino Project : This project is started for the protection of One Horned Rhino of India. In India most of the rhinos are found in Assam State. These are also found in less number in Sundarban of West Bengal. According to the strategy of 'Rhino Vision 2020', an increase in the number of rhinos is targeted at 3000.

Things to know :



One Horned Indian Rhino :

- It is seen in the marshy regions of Brahmaputra and Sundarban. It is hunted for preparing medicine from its horns. It is a herbivorous animal. Due to the attempts of its protection, its number has increased.

4. Crocodile Project :



9.2 Crocodile and Alligator's Species

This species of alligators which is found in fresh water was on the verge of extinction in the decade of 1970. The Government of India took timely steps to start this project.

5. Vulture Project : Vulture is the cleanliness worker of the nature. It eats the meat of dead animals. There are about 9 sub-species of vulture in India. Due to the unusual decrease in its number, this project was started in 2004.

6. Snow Leopard Project : This species which is found at an altitude of about 3000 metres in Himalayas lives in snow only. This Project was started in 2000 with the purpose to increase the knowledge about snow leopard among the local people, so the people would be aware to protect it.

Besides these, other projects which are operational including Kashmiri Hangool Project, Red Panda Project, Manipur Tamil Project for the special species of deer found in Manipur, Ganga-Dolphin project on Ganga-Brahmaputra rivers etc.

Sanctuaries, National Parks and Bio-reserve :

Sanctuaries, national parks and bio-reserves are established for the protection of wild life. All these three words sound like synonyms but there is some difference. Let us be familiar with them.

1. Sanctuary :

- Human activities are permitted within certain limit.
- Domesticated animals can be allowed to graze after due permission from the authorities.
- Wildlife sanctuary is established for the protection of some species. The sanctuary can be established by the Government after certain process.
- Perriyar, Chandraprabha, Eturnagaram etc. are famous sanctuaries.



9.3 Major National Parks and Sanctuaries

2. National Park :

- Compared to the sanctuary, this is more protected zone.
- More than one ecosystem included here.
- There is a complete ban on animal grazing.
- It is not centred around one species as it is in a sanctuary.
- It is established through the coordination of State and Central Government.
- Kaziranga, Corbett, Velavadar, Marine National Park, Gir, Dachigam etc. are important National Parks.

3. Bio-reserve Zone :

- It is formed according to International norms.
- The purpose is to protect the physical and cultural diversity of any region.
- Besides the vegetation, insects and land of that area, the life style of the people living there is also protected.
- Special arrangements are created for research and training about bio-reserves.
- In such proclaimed area, all external human movements are totally restricted.
- The average area of such zone is larger than 5000 sq. kilometres.
- Nilgiri, Gulf of Mannar, Great Nicobar, Sundarban, Pachmadhi etc. are considered to be the important bio-reserves of the nation.
- The Rann of Kachchh of Gujarat was declared as a Bio-reserve zone in 2008 for the protection of its special environmental conditions.

Like to know

	Bio-protection Zone	National park	Sanctuary
India	18	103	531
Gujarat	1	04	23

Developmental process is inevitable. But along with it, it is necessary that we keep in mind its ill effects on the entire life system while planning. Whenever one species is completely destroyed or is in danger, the results of the disturbances in the food chain are far reaching. In food chain every insect has a specific role. If a life is lost, the entire structure experiences disturbance. If one species is removed, the natural system breaks down in long run.

These effects reach man very late hence we are not aware of it. Those environmental dangers which we are following are the result of carelessness developed before decades. If we have a planned development, there will not be any problem. Friendly approach with the environment is the need of present day.

Things to know

Henotaro : This animal lives in the arid and semi-arid regions having alkaline forests and grasslands, desert or semi-desert area. It lives in the Greater and Smaller Rann of Kachchh of Gujarat, Banni and in Narayan Sarovar sanctuaries. It can be identified as it is slightly taller than the fox, has fleshy round mouth and has high ears. It hunts smaller birds and animals. Its existence can be known by its foot prints.



Things to know

Dugang : This is an aquatic animal. It is seen in very small numbers along the western sea coast of India. Besides, it is also found along the sea coasts of East Africa, South-East Asian sea coast and northern coast of Australia. Sea grass and vegetation is its main food, but occasionally it also eats aquatic animals. It is widely hunted for its meat and fat. Earlier this dugang was found frequently along Gujarat coast, specially along Saurashtra coast, but today it is rarely seen along Gujarat coast.



Exercise

1. Answer the following questions in details :

- (1) Write a detailed note on types of forest.
- (2) State the remedies for forest conservation.
- (3) Describe various projects of wild life protection.

2. Answers in brief :

- (1) What is meant by bio-reserve zone ?
- (2) Where would we find Tigers in Gujarat ?
- (3) State the reasons for forest destruction.
- (4) Write notes about the wild life on the verge of extinction.

3. Answer the following questions in brief.

- (1) What is meant by a sanctuary ?
- (2) What is a National Park ?
- (3) In which state is the Nal Sarovar located ?

4. Select the correct option from the options given for each question and write the answer :

- (1) Which wildlife is extinct from Gujarat
(A) Gudhkhar (B) Bear (C) Tiger (D) Leopard
- (2) Forests over which the Local Self Govt. institutions (Grampanchayat, municipality, corporations) have control
(A) Village forests (B) Sanctuary forest (C) Collective forest (community) (D) Jhoom forest

(3) How many species of animals and birds are there in the world ?

- (A) Twelve lakh (B) Twenty one lakh (C) Seven lakh (D) Fifteen lakh

Activity

- Arrange a celebration of the special day pertaining to environment.
- Arrange a competition of question-answer (catechism) keeping the wild life in centre.
- Paste the cuttings from the newspapers and periodicals regarding wild life on the school bulletin.
- Invite an expert to lecture on environment and on wild life diversity.
- If possible, arrange a visit to a zoo during your school trip.
- Know about new things from the following web sites with the help of your teacher or parent and present it in the prayer assembly or the class in your school.

www.gujaratforest.org

www.geerfoundation.gujarat.gov.in

www.kidsrgreen.org

www.eoearth.org

<http://www.wwfindia.org>



Since ancient times, agriculture has remained a prime economic activity of most of the people in India. Even today also, main support for the Indian economy is agriculture. Agriculture is an important resource of India. About 60% of the labour power is engaged in agriculture. Besides supplying food to the people of India, raw material for many industries also comes from agriculture. Agriculture occupies about 22% of the national product. Crops and other farm products hold about 18% contribution in export which earns huge foreign exchange. The Indian economy is mainly dependent on agriculture. Thus India is an agrarian country.

In most of the areas in India, two or more crops annually can be taken due to the factors like fertile plains, favourable climate for round the year cultivation, irrigation, skilled and hard working farmers etc. Even then the progress in the field of agriculture is not sufficient. The Indian farmers are generally poor and uneducated. Agricultural production in India is much less compared to the world due to reasons like inadequate facilities of irrigation, irregular and uncertainty of rain, more population, larger family, smaller farms, no interest in experimentation, less usage of chemical fertilisers, modern machinery and scientific approach for cultivation, educated mass opting away from agriculture, the so called lower status for agriculture in the society etc.

Types of farming

The socio - economic condition of the people of India, administrative policy and the entire Indian economy are associated with agriculture. Farming types are classified according to irrigation methods, farm outputs, economic return etc.

(1) Subsistence Farming : After Independence many agricultural development projects are implemented, yet the economic condition of Indian farmer is very weak even today. Costly seeds, fertilizers and use of insecticides are not affordable in smaller farm holdings. The farm production is just sufficient for his family and is consumed in the maintenance of the family. This is called subsistence farming. So even today, Indian agriculture is considered to be an activity for life maintenance only.

(2) Dry Farming : Where the rainfall is inadequate, irrigation facilities are less there, farming is dependent only on rain. Only one crop is taken through the humidity accumulated within the land. This is known as Dry farming. Crops like jowar, millet and pulses which require less water are grown here. In Gujarat, wheat and gram are grown in the humid soils after the monsoon is over.

(3) Wet Farming : Wet farming is carried out in the regions of heavy rain and adequate facilities for irrigation. If there is no rainfall or if it is insufficient, more than one crop is taken with the help of irrigation, wherein paddy, sugarcane, cotton, wheat and vegetables are grown.

(4) Shifting (Jhoom) Agriculture : Here, forests are burnt and cleared, and farming is carried out there. The farming takes place for two or three years. When soil fertility is reduced, that area is abandoned and the same method is applied to start farming at other place. This is called Jhoom cultivation. Cereals or vegetables are grown in this type of agriculture. The production is less in this type of agriculture.

(5) Plantation Agriculture : This is a special type of agriculture. Here rubber, tea, coffee, cocoa, coconut, apple, mango, oranges, grapes, amla (myrobalan), lemon, kharek (khalela, dried date) etc. are reared with great care. It is necessary that there should be more capital investment, skill, technical knowledge, machines, fertilizers, protection on all sides, acquisition and transportation facilities.

(6) Intensive Farming : Intensive farming is the mechanized way of farming through utilization of increased irrigation, use of chemical fertilizers, insecticides and other mechanical equipments. Cash crops grow more in this type of farming. The per hectare production has increased very much here and the area sown under these crops has increased. As more importance is given to economic returns in this type of farming, it is also known as Commercial Farming.

Farming Methods

Organic farming, sustainable farming, mixed farming etc. are some of the current methods of farming in India.

Organic Farming : The rate at which the chemical fertilizers and the insecticides are used, the destructive effects of these chemicals is also felt. Due to the presence of these chemicals and insecticides in grains, vegetables and fruits it has affected adversely the hygiene of the people. More damage is caused to environment. The productive capacity and fertility of the land has reduced, due to which the crop production of the land and its quality were reduced over a long run.

Organic farming is that method of farming in which urea or any other chemical fertilizer and insecticides are not used. For the nutrition of the crop dung, earthworm fertilizer, composite fertilizer etc. are used. Cow urine, neem solvents, buttermilk etc. are used for the protection of crops. The organic products are full of nutrition. They contain natural taste, sweetness and fragrance. There are minerals, vitamins and life energising elements in these crops. Now-a-days, organic farm products are more in demand so the farmers also get a good return.

Sustainable farming : In order to see that the soil fertility is retained for a longer time, care is taken for crop rotation, use of chemical fertilizers only when necessary, use of biotic controls for insects and harvests, water conservation etc.

Mixed farming : Here the cattle rearing, poultry, sericulture and fishery etc. are also carried out simultaneously along with farming.

Agricultural products of India

As per the seasons, the agricultural crops of India can be grouped into three categories : 1 Kharif crop 2. Rabi crop and 3 Zaid crop.

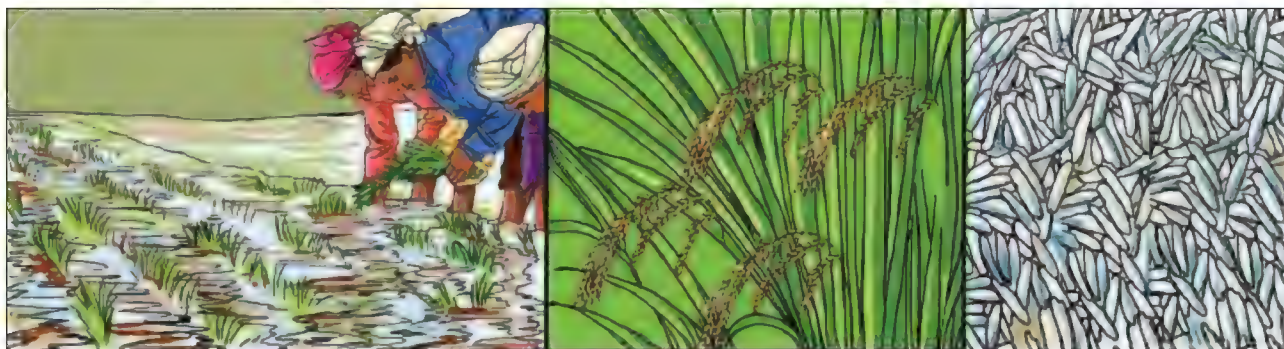
Kharif(monsoon) Crops	Rabi (winter) Crops	Zaid (summer) Crops
<ul style="list-style-type: none"> ● Crops which are taken during rainy season are called kharif crops. ● Time for these crops is from June-July to October-November. ● Paddy, maize, jowar, millet, cotton, til, groundnut mung and matth are kharif crops. 	<ul style="list-style-type: none"> ● Crops which are taken during winter are called rabi crops. ● Time for these crops is from October-November to March - April. ● Wheat, gram, barley, mustard, linseed etc. are rabi crops. 	<ul style="list-style-type: none"> ● Crops which are grown during summer are called zaid crops. ● Time for these crops is from March to June. ● Paddy, maize, groundnut, til, millet and fruits like watermelon, cucumber, musk melon etc. are zaid crops.

Major agricultural crops : Due to the diversities in geographical conditions, climate, variety of land, the amount of rainfall etc. different crops are grown in different parts of India.

Major agricultural products of India							
Food Grains	Pulses	Oil seeds	Beverages	Cash crops	Condiments	Fruits	Vegetables
Paddy	Tur	Groundnut	Tea	Cotton	Cumin seed	Mango	Potato
Wheat	Mung	Til	Coffee	Sugarcane	Fennel	Banana	Brinjal
Jowar	Gram	Soyabean	Cocoa	Jute	Isabgul	Chikoo	Onion
Millet	Peas	Castor		Tobacco	Corriander	Papaya	Bottlegourd
Maize	Bean	Mustard		Rubber	Fenugreek	Grape	Turiya
Barley	Matth	Sunflower			Ajvain (Ajamo)	Jujube	Ladies finger
	Udad	Coconut			Black pepper	Apple	Cabbage
	Lentil	Linseed			Garlic	Guava	Cauli flower
							Various Spinach

Food Grains : Grains are cultivated in about 75% of the total area sown and about 50% of the total production comes from grains. Major food grains are as follows :

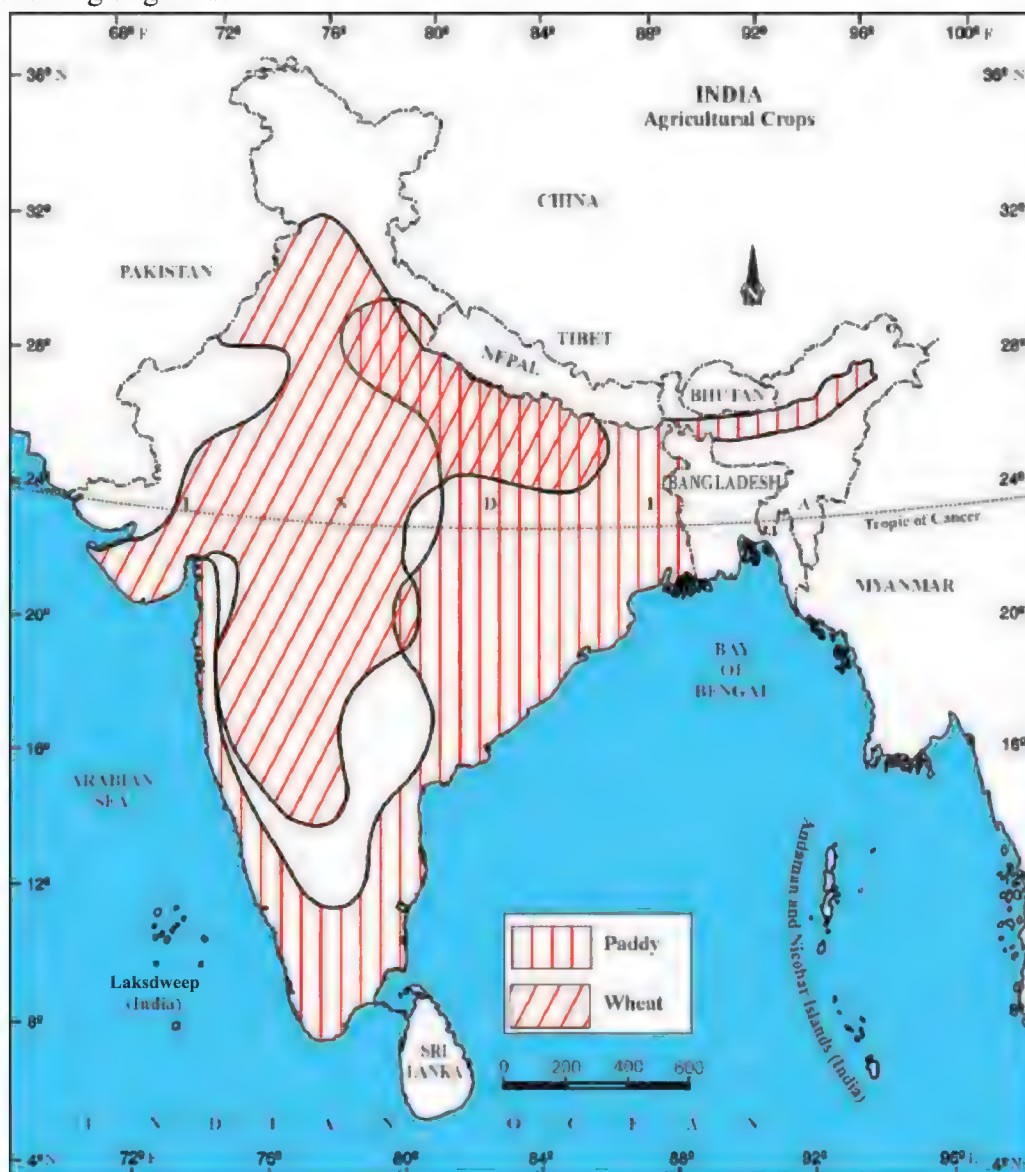
Paddy (Rice) : Paddy is our most important crop. A large majority of the world and about half of the population of India uses rice. India stands second in the world after China in paddy production. Paddy is sown over one fourth of the total sown area. Paddy is a crop of torrid zone. Hot and humid climate, minimum temperature of 20° C, fertile alluvial soil and more than 100 cm of rainfall are necessary for more production. In the regions of less rainfall in Punjab, Haryana and Uttar pradesh, this crop is taken through irrigation. More human labour is necessary for paddy cultivation. West Bengal, Tamil Nadu, Andhra Pradesh, Telangana, Bihar, Orissa are major paddy producing states. The crop is taken two or three times in West Bengal, Uttar pradesh, Bihar, Orissa and Tamil Nadu. In Gujarat paddy is grown in Surat, Tapi, Panchmahal, Ahmedabad, Kheda, Anand, Valsad districts. Paddy requires more water. However, instead of keeping the paddy fields fully under water, paddy is grown by irrigating through sprinklers using less water.



10.1 Paddy Cultivation

Wheat : Wheat is the second important crop of our country after paddy. Wheat is grown over one third area of arable land of our country. It is the substantial food of the people of North-West India. Wheat

is a rabi crop of temperate zone. It requires black or fertile loamy soil and more than 75" of annual rainfall. Wheat can be grown in the regions of lesser rainfall with irrigation. Wheat can not be grown in the area receiving more than 100" rainfall. Less labour force is required as mechanization is introduced in Wheat cultivation. After the green revolution, the wheat production is almost doubled. Wheat cultivation is carried out mostly in Punjab, Haryana and Western Uttar Pradesh. These states contribute about two third of the total national production. As there is irrigation facility in these States there is more per hectare production. Due to the canal water in Punjab there is abundant wheat production. That is why Punjab is also called as 'Wheat Bowl' of India. Wheat is also produced in the States of Madhya Pradesh, Rajasthan, Gujarat, Maharashtra, West Bengal etc. 'Bhaliya wheat' is produced in the Bhal region of Gujarat. Besides, Mahesana, Rajkot, Junagadh, Kheda also produce wheat. Among all food grains used in the daily meals wheat is the best. Many items like rotli, bhakhri, sev, shiro, lapshi, ladu, sukhadi, bread, puri, cake, biscuits etc. are prepared from wheat. Among all grains, wheat is the most nutritious. That is why wheat is also called as the king of grains.



10.2 India : Agricultural Crops

Jowar, bajra, maize and barley are major coarse grains grown in India.

Jowar : Jowar is the most produced grain in India after paddy and wheat. This crop is grown very

widely in the dry and less rainy region of southern peninsula. Jowar is both kharif and rabi crop. Temperature between 25° to 30°C, 125 cm of rainfall, black and loamy soil are favourable conditions. It is produced in Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, Gujarat States. Maximum farming of jowar in Gujarat is done in Surat and Tapi districts.

Millet : Millet is considered to be the grain of labourers. It is grown in the regions having temperature between 25°-30°C, rainfall between 40-50 cm and light sandy soil. Major States producing millet are Rajasthan, Gujarat, Uttar Pradesh and Maharashtra. The Banaskantha district in Gujarat leads in the millet production in Gujarat.

Maize : This is a kharif crop. Maize is the most grown crop in the world after paddy and wheat. Maize is grown more in hilly area and it is a staple food of the people. Maize contains starch, oil protein, bio-fuel etc. so it is used more in industrial productions. Sloppy, black, hard, rocky and water having gentle flow are more suitable for its cultivation. Rainfall between 50 – 100 cm and 21° to 27° C temperature are favourable factors. Its usage is increasing as animal fodder, dhani and the oil. It is increasingly used as animal fodder, making popcorn and for edible oil. Major states producing maize are Rajasthan, Uttar Pradesh, Bihar, Madhya Pradesh, Punjab, Jammu and Kashmir, Himachal Pradesh, Karnataka and Andhra Pradesh. In Gujarat, maize is grown more in Panchmahal, Dahod, Sabarkantha and Aravalli districts.

Pulses : Pulse is the main source of protein for vegetarian people. Tuver, mung, gram, peas, beans, math, udad etc. are considered as pulses. Tuver, udad, mung, math are kharif crops. Gram, peas and lentil (masur) are rabi crops. Pulses are grown in all States except where rainfall is more. Major pulse producing states are Madhya Pradesh, Rajasthan, Uttar Pradesh, Maharashtra, Odisha, Bihar, Andhra Pradesh etc. In Gujarat, tuver is sown more in Vadodara district, mung and math in Kachchh district and udad in Patan district, Nitrogen is reinstated in soil by growing pulses, so it is sown as an inter crop along with or after the main food crops.

Things to know :

Nagli (ragi) holds a unique place in the grass food-crops sown in Gujarat. Nagli is a staple food of the adivasi (aborigin) people in hilly region. Among all grass food-crops sown in Gujarat and in India, the per hectare production of nagli is the maximum. Nagli is known as Finger millet or African millet in English and is known as Bavta in Gujarati. Nagli is extremely nutritious grass food-crop. There is more of protein, minerals and vitamins in its grain. As there is more fibre in nagli, it is very advantageous for the patients of diabetes and cardiac patients. The proportion of calcium and iron is also more in nagli compared to other crops, so it is used for removing mal-nutrition and in the making of baby food. The adivasi farmers eat rotla made from the nagli flour. Besides biscuits, chocolates, toasts, nankhatai, wafer, papdi etc. are also prepared from its flour.

Oil seed : Groundnut, til, soyabean, castor, mustard, sun flower etc. are considered to be oil seeds. They hold an important position in the Indian meal. After edible oil is extracted from the oil seeds, the remaining oil-cake is used as animal fodder and also as biotic manure.

Groundnut : Groundnut holds an important position in oil seeds. Black, and a mixture of loamy and sandy soil, land which would not retain water, 20° to 25° C temperature and 50-70 cm rainfall are the favourable conditions. Groundnut is sown as kharif crop and wherever there is irrigation facility, it can be sown during summer also. Gujarat, Andhra Pradesh, Tamil Nadu and Maharashtra are major producers of groundnut. India ranks second after China in the world in groundnut production. Gujarat leads the country in groundnut production. Districts of Junagadh, Gir, Somnath, Amreli, Rajkot, Bhavnagar etc. produce groundnut. Groundnut oil is used more in Gujarat as edible oil.



10.3 Groundnut

Sesam/Til : Til oil is used in India since ages. In North India, it is a rain-based kharif crop. In South India, it is sown as rabi crop and occasionally as zaid crop also. Almost all the states grow til. Among all oil seeds til has more content of oil. In almost all parts of the world, it is used as an edible oil. Major producers of til are Gujarat, Tamil Nadu, West Bengal, Karnataka and Madhya Pradesh states. Gujarat ranks first in India in terms of til production and the area sown. Banaskantha grows maximum til. Maximum export of til in the world is done by India.

Mustard : This is a rabi crop and is an important crop of North India. Mustard seed and its oil are used for medicine and also as edible oil. Rajasthan, Uttar Pradesh, West Bengal, Gujarat and Madhya Pradesh are major producers of mustard.

Coconut : Coconut is a plantation crop of hot and humid coastal climate and saline land. In India, the coconut plantations are found in Karnataka, Kerala, Tamil Nadu, Andaman – Nicobar etc. In Gujarat, coconut is grown in coastal regions. A special type of coconut tree which is shorter and giving more yield is developed. In south India, coconut oil extracted from the coconut kernel is used as edible oil. Besides, its water is useful as a healthy drink.



10.4 Castor

Castor oil : Castor is also known as Divela locally. It is both kharif as well as rabi crop. With 64%, India is the largest producer of castor in the world. China and Brazil come next respectively. About

80% of its production comes from Gujarat. Andhra Pradesh and Rajasthan are other producers. In Gujarat, the districts of Banaskantha, Patan, Sabarkantha, Rajkot, Junagadh, Amreli etc. produce in little quantity. The oil from cotton seeds, sun flower, paddy and maize also are used increasingly as edible oils.

Hot Beverages

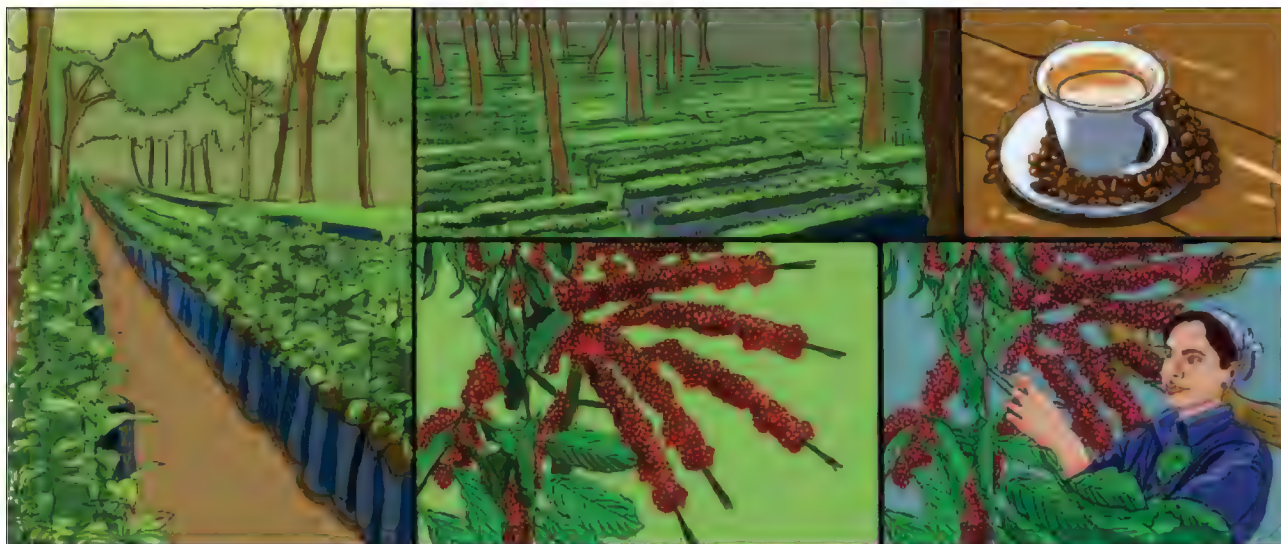
Tea : Tea is a plant of tropical as well temperate zone. The tea leaf and its tender sprouts are processed and its powder and small leaves are used in drinks. India produces maximum tea after China. Sri Lanka, China and India are leading tea exporters. Sloppy land where the water easily flows down, good iron



10.5 Tea Plantation

contents, 20° to 30° C temperature and about 200 cm of rainfall coming in the form of showers throughout the year are favourable conditions for tea plantations. Tea is grown more in Assam, West Bengal, Uttarakhand, Uttar Pradesh, Tamil Nadu and Karnataka. Assam and West Bengal produce about 75% tea of the nation. The tea leaves are very skilfully plucked from the plants.

Coffee : Coffee is reared over the slopes of mountains in the shades of larger trees in such a way that no direct sun light falls on the coffee leaves. The coffee crop needs 150–200 cm rainfall and 15° to 28° C temperature and sloppy mountain land. Coffee is grown in abundance in Karnataka, Kerala



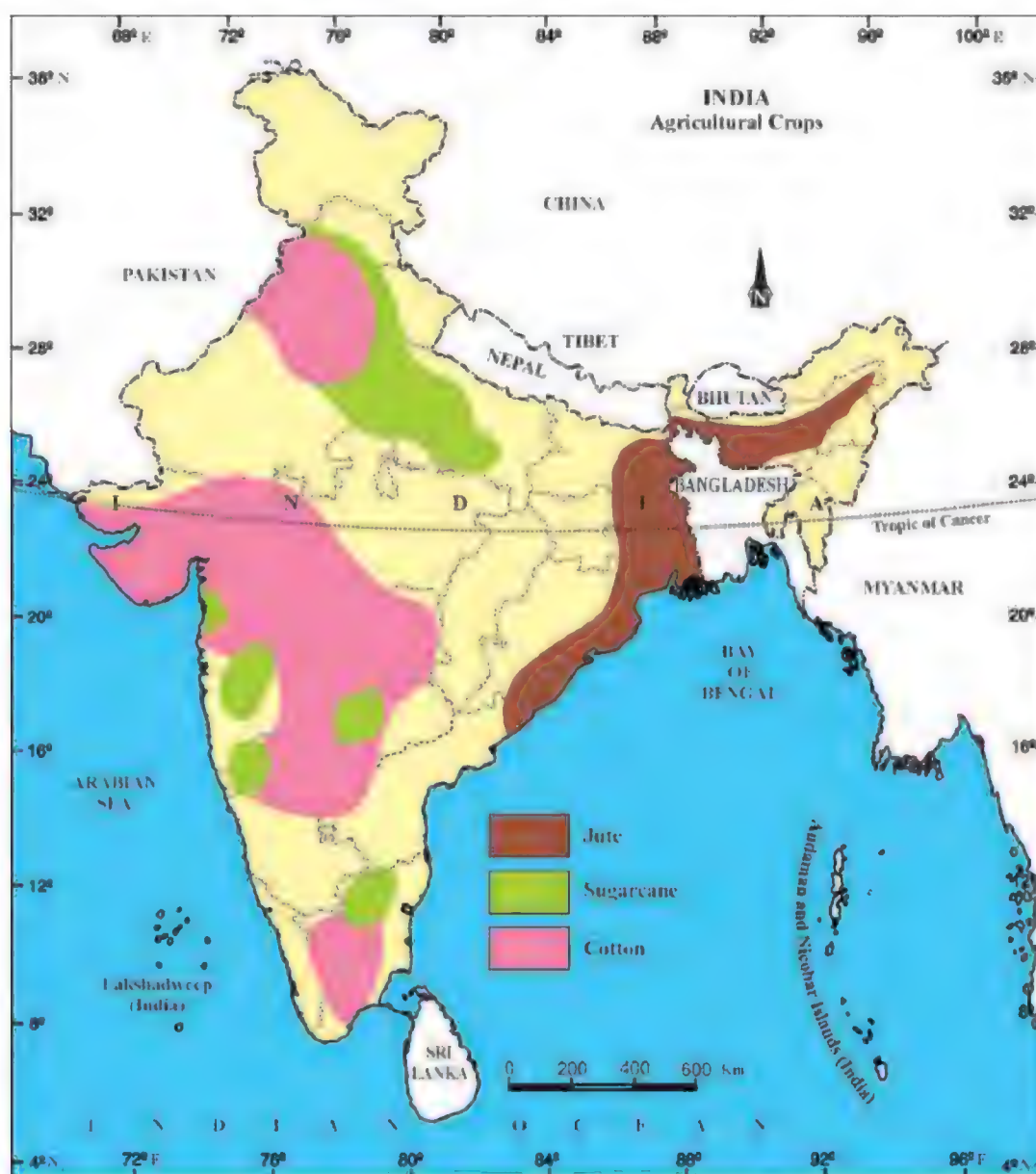
10.6 Coffee Plantation

and Tamil Nadu. Coorg area of Karnataka is a well-known region for coffee production. Coffee seeds are extracted out of the nuts, grinded and then it is used as a drink.

Cocoa : Cocoa is prepared out of the seeds of the cocoa fruit. Coco is a beverage. Chocolate is prepared from cocoa. It requires hot and humid climate and excessive rainfall. African countries are its major producers. Cocoa production is on increase in Kerala, Karnataka, Andhra Pradesh and Tamil Nadu. states.

Cash crops

Cotton : Cotton is a kharif crop. Cotton holds an important place as a cash crop in Gujarat and in India. At world level, India is at the second place in the production, usage and export of cotton. Cotton (without seed) is obtained from the cotton plant. This cotton is known as 'White Gold' in India. Besides the cotton seed oil is used to prepare edible oil and its seeds and oil-cake are used as animal food. Black lava soil which can retain humidity for a longer time, soil with plenty of mineral contents, hot and humid climate, 20° to 35° C temperature and 30-70 cm rainfall etc. are favourable conditions for cotton. The growing season for cotton is about 6-8 months. Frost damages the cotton crop. In India, major cotton producing states are Gujarat, Maharashtra, Telangana, Karnataka, Andhra Pradesh, Haryana, Rajasthan, Punjab, Tamil Nadu, Odisha etc. As the farmers of Gujarat have accepted BT cotton seeds, Gujarat stands first in India in area sown, productivity, total production and quality of cotton. Cotton is grown more in Surendranagar, Rajkot, Vadodara, Ahmedabad, Sabarkantha, Mahesana, Botad, Bharuch, Kheda, Surat, Panchmahal, Amreli, Bhavnagar, Patan, Junagadh and Jamnagar districts.



10.7 India : Agricultural Crops

Sugarcane : Sugarcane is a major crop in India. Maximum sugarcane is sown in India in the world. In production, India ranks second after Brazil. Sugar, gur, khandsari and ethanol are produced out of sugarcane. Black fertile alluvial lava soil, hot and humid climate, 21° - 27° C temperature, 75-100 cm rainfall are necessary for sugarcane. Uttar Pradesh is at the top in area sown, but Maharashtra leads in the production. South Gujarat and Saurashtra produce more sugarcane in Gujarat.

Jute : India produces maximum of jute in the world. The jute fibre is called 'Golden Fibre'. Jute cloth, gunny bags, mattresses, ropes, bags, foot wears, handicrafts items etc. are made from jute. India has a strong competition from Bangladesh with regards to cheap labour in just industry. Jute requires fertile soil of the delta region where new sediment is deposited every year, hot and humid climate, 30° to 40° C



10.8 Jute cultivation

temperature and more than 100 cm rainfall. Jute is grown more in the Ganga delta in West Bengal, Assam, Bihar, Orissa and Uttar Pradesh.

Tobacco : Tobacco is a kharif crop. Sandy loamy soil, 20° C temperature and 100 cm rainfall are suitable for tobacco cultivation. Soil is a determining factor than climate for tobacco cultivation. Major four countries in the world which grow and export tobacco are China, Brazil, India and U.S.A. Gujarat, Andhra Pradesh, Uttar Pradesh and Karnataka are major States producing tobacco in India. The Charotar region of Kheda and Anand districts, Mahesana, Vadodara, Panchmahal grow more tobacco. About 80% of bidi - tobacco of India is produced in Gujarat. Tobacco is used to make gutkha, bidi, cigarette, snuff etc. Tobacco consumption is harmful to health. Sikkim is the first state to ban tobacco-gutkha.

Rubber : Rubber is prepared out of the milk oozing out of the latex trees. Acetic acid is mixed with the milk collected from the rubber plantations, then it is heated on low temperature to obtain rubber. It is used in many industrial products like tyres, tubes etc. Rubber plantation is carried out in the regions

of hot and humid climate and heavy rainfall. Malaysia ranks first in the world in rubber production. In India Kerala, Tamil Nadu, Karnataka, Assam and Tripura are rubber producing states.

Condiments and Spices : Gujarat ranks first in the production of cumin seed, fennel seed and isabgul in the world. Besides this, India leads in the production and export of dried coriander, fenugreek, mustard, suva and ajwain. India contributes about 35% in the total world production of condiments. India black pepper, cinnamon, clove etc. are in high demand in the country and world. Ashwagandha, tulsi, kariyatu, mindhi aaval, white musli, madhunashini, ashok, garmal, lindi piper, galo, allovera etc. are included as medicinal plants and mint, menthol, palmroza, lemon grass etc. are included as flavoured crops.

Fruits, Vegetables and Flowers : In fruit production, India ranks second after China. Fruits like banana, mango, apple, grape, naspati, orange etc. are grown in India. Bananas are grown in Tamil Nadu, Gujarat and Maharashtra, apples in Jammu - Kashmir, Himachal Pradesh and grapes in Uttarakhand, Maharashtra, Himachal Pradesh, Jammu-Kashmir, Punjab, Tamil Nadu, and Andhra Pradesh. As the grape production is less than its demand, it is imported from Afghanistan, Pakistan and Australia. Besides, various vegetables are grown. Flowers like rose, jui, mogro, galgota etc. are also cultivated. Thus, various crops are grown in India.

Things to know

With the increasing cultivation for cash crops, there is a shortage of grass. Various type of grass like fodder crop, Dharaf (Gujarat Dharaf-1), Anjan (Pusa Yellow Anjan), Marcel (Gujarat marvel grass-1), Shaniar (Gujarat shaniar - 1) and jinjvo, dhaman, hemeta and clataria are grown in Gujarat. Generally, all grass types should be harvested in October, i.e. after four months of sowing them.

Technical and Institutional Reforms in agriculture :

Earlier, farming was carried out by simple and ordinary farm implements like sickle, spade, hoe (pavdo), drill plough, plough, bullock cart etc. Now modern implements have entered into it of which tractor, trailers, rotavators etc. are common. Besides, modern equipment like thresher and harvesters are used in the wheat harvesting. There is an increase in the usage of chemical fertilizers, hybrid seeds, BT seeds, insecticides, drip irrigation and green houses etc.

Technical Reforms

The changes which have taken place in seeds, fertilizers and farm implements in India are known as technical reforms.

- The farmer who earlier used leather buckets and water wheel, now uses submersible pumps or mono bloc pump, solar pump, drip irrigation and sprinklers.
- Chemical fertilizers like di-ammonia phosphate (D.A.P.), nitrogen, phosphorous, potash (N. P. K.), urea and other bio-fertilizers, liquid bio-fertilizer, bio-tec seeds are used.
- Farmers are constantly guided through radio, television, news papers, DD Kisan channel, SMS on mobile by the kisan toll free number 1800 180 1551 (Kisan call centre), Govt. Farm web portals, i-khedut and mobile app like 'agri market'.
- New agricultural researches and new techniques are conveyed to the farmers in the villages by Gram Sevak.

- A farmer training centre is established in every district head quarter wherein the farmers are given training.
- Recent information and guidance are provided to the farmers through agricultural fairs in Gujarat.
- Agricultural University and agricultural colleges are established in every state. Agricultural Universities are established at Dantiwada, Junagadh, Anand and Navsari in Gujarat. These universities carry out research and prepare new experts in agriculture.
- Besides these, Indian Council for Agricultural Research (ICAR) and Department of Agricultural Research and Education (DARE) are active at national level.

Institutional Reforms : The reforms connected with land ownership, crop subsidy and sale of farm produce are considered to be the institutional reforms in India.

- Government has discarded landlordism and stopped the exploitation of farmers. Under the law 'land to the tiller' (Land Tenancy act), the land tillers have been given their right to become the owner of the land.
- The disparity among the land owners has been removed by Land Ceiling Act.
- Farmers are given financial help for crop subsidy by Kisan Credit Card and by nationalised and cooperative banks.
- Farmers are given full insurance protection of their crops through Prime Minister Crop Insurance Scheme.
- When the crops fail due to drought or through excessive rain, farmers are given financial help by Government.
- By providing legal support, an open auction process is made widespread for the sale of farm products in the marketing yards.
- Facilities like cooperative societies, market associations, cooperative warehouses, cold storages, transportation and communication etc. have been provided so that the farmers would get the minimum support price of the farm products.
- Following organisations are operating for the purchase of the farm products from the farmers at support prices.
 1. National Agricultural Co-operative Marketing Federation of India (NAFED)
 2. Gujarat Co-operative Oil Seeds Growers' Federation (GROFED).
 3. National Dairy Development Board (NDDB)

Green Revolution

Green revolution took place in our country in the decade of 1960, but before that there was a time when there was an acute shortage of food grains in the country. An agrarian country had to import food grains. The country was struggling against such dependent conditions.

- The extraordinary increase in the agricultural production because of improved seeds, increased use of chemical fertilizers, intense efforts of the farmers, widespread arrangement for electricity distribution, improved facilities in irrigation etc. is known as 'Green Revolution'.
- Main objective of the green revolution was to increase agricultural production. Farmers were encouraged to use chemical fertilizers and insecticides more. This led to attain the target to increase the agricultural production.
- There has been a record production of wheat and paddy due to green revolution.
- Where there was a scarcity of food grains in the country, today there is sufficient storage of the food grains.
- Once drought was a hazard of regular interval in India. Its adverse effects are not seen after the green revolution. Due to the buffer stock of food grains, the conditions of drought or scarcity are faced conveniently.
- The self sufficiency in food grains is a landmark of historic achievement of green revolution.

Today, the production of cash crops has increased and the production of pulses and other cereals has decreased, with the repetition of the same crop. To reach the stage where other countries of the world have progressed using better technology in agrarian field, we will have to be ready for next green revolution.

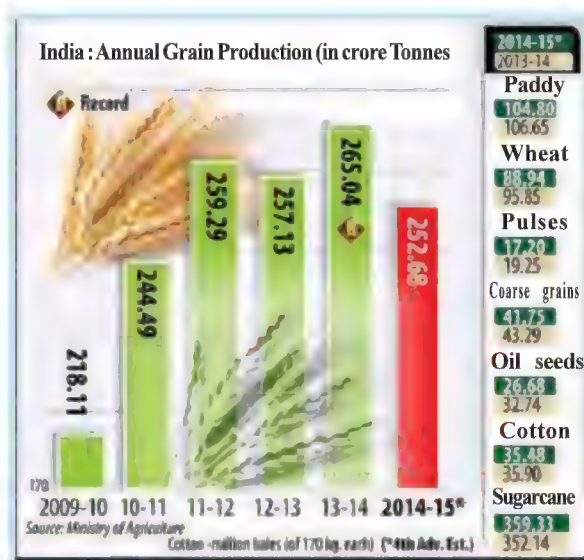
Role of agriculture in Indian economy

Agriculture is the main occupation in India. The pressure which India had at the time of Independence is now reduced somewhat, however it still has an important contribution in Indian economy.

- It provides employment to about one half of the population of the country.
- Agriculture holds about 17% of the total Gross Domestic Product (GDP).
- Paddy, wheat, oil seeds, cotton, jute, sugarcane, tobacco, potatoes etc. are major agricultural products of India. Much foreign exchange is earned from their export.
- India ranks second in the world in agrarian production.
- Industries like cotton textile, sugar, paper, oil etc. as well as the industries regarding the food processing get their raw material from agricultural products only.
- Agriculture provides food to the people of India.

The Indian contribution is not consistent in the world agricultural market because of irregular and uncertain rain and inadequate facilities for irrigation.

Food security is necessary for any country today. If the demand for the food grains is increasing and if the food grains have to be imported, then the political independence of that country may be at a risk. We have become self-reliant in the field of grain production due to green revolution. Along with the increase in farm production, there is an increase in population of the country also. In 1951, India's



10.9 India : Grain Production

population was at 36 crore 10 lakhs, which today is more than 125 crores. This has increased the demand for food grains. However, there has been an increase in the production of food grains in our country during last 5 years. In 1950-51, India had produced 51 crore tonnes of food grains, which has increased to a record level of 265.04 crore tonnes in 2013-14. With the food grains which we have today, the minimum requirement of the country can be fulfilled. It is necessary to maintain buffer stock and to increase it. By the buffer stock of the grains, the scarcity of the grains can be prevented during droughts or in the case of inadequate production of the food grains. The wastage of food grains can be prevented by implementing the techniques to preserve the grains in warehouses. The hunger of thousands of families can be satisfied if this buffer stock is distributed among them free of charge. It is a strong necessity of the time to stop the wastage of food grains. It is necessary to strengthen food stocking and the arrangements to conserve it. It is a good beginning that the Government has made provision to supply the food grains up to the poor people through the Food Security Act.

Impact of globalization on Indian agriculture

The policy of globalization has been implemented with the purpose that the Indian farmer can sell his farm products in world markets and earn profit. Many changes took place in the agricultural field due to globalization. The process to export or import crop productions is made very simple. Cotton, chillies and til are now available in Chinese markets and various fruits from world are now available in Indian market. The costly “genetically modified” BT seeds sold by the multi-national companies are now available in India. Due to this farming has become costly. The production of cotton and maize has increased. With the import becoming smoother, the domestic farm products have to face tough competition. Some products have gained global markets hence the necessity of registration of their Patents. It is necessary to register qualitative farm productions as National Patent in the world market.

To face the competition in agricultural products in global markets, India will have to adopt new technology and concentrate on quality. A series of planned steps will have to be taken to increase the economic prosperity and solidarity of people. With increasing population, the probable future increase in the demand for agricultural products and to maintain the march to economic progress, it is necessary to arrange the strategy for second green revolution.

Exercise

1. Answer the following questions in details :

- (1) Write notes on types of agriculture.
- (2) State the institutional reforms made in agrarian field.
- (3) Write a note on ‘Global market and Indian agriculture’.
- (4) Describe the ‘Wheat crop of India’.
- (5) State about the ‘Oil seeds crops of India’.

2. Write to-the-point answers of the following questions :

- (1) Why is there more inclination for organic farming ?
- (2) Give difference : Kharif crop - Rabi crop.
- (3) Describe the contribution of agriculture in the economy of India.
- (4) ‘Paddy’ the most important crop of India. Explain.

3. Answer the following questions in brief :

- (1) State the uses of maize.
- (2) State the favourite conditions for the growth of coffee.
- (3) Which type of farming is carried out in Bhāl region and which crop is cultivated ?
- (4) What is meant by Green Revolution ?
- (5) Name the institutions working on agricultural research at national level.

4. Select the correct option from the options given for each question and write the answer.

- (1) Which of the following farming types has the lowest per hectare production ?
(A) Plantation (B) Jhoom cultivation (C) Intensive cultivation (D) Wet farming
- (2) In which of the following farming types, the chemical fertilizers and insecticides are not used ?
(A) Organic farming (B) Mixed farming (C) Plantation (D) Sustainable farming
- (3) Which state produces maximum groundnut ?
(A) Kerala (B) Tamil Nadu (C) Madhya Pradesh (D) Gujarat
- (4) What is the chocolate made from ?
(A) Til (B) Cocoa (C) Rubber (D) Tea
- (5) In the production of which of the following condiments is Gujarat first ?
(A) Isabgul (B) Fenugreek (C) Mustards (D) Corriander
- (6) Which of the following pulses is a rabi crop ?
(A) Udad (B) Mung (C) Gram (D) Math

Activity

- Classify the crops grown in your area in the following table.

Grains	Pulses	Oil seeds	Beverage	Cash crop	Condiments	Fruits	Vegetables

- Collect the plant and seeds of different crops and see the difference after the plant has grown.
- Collect agricultural information from the website [https:// ikhedut.gujarat.gov.in/](https://ikhedut.gujarat.gov.in/) of Gujarat Government.
- Know the rates of farms products appearing in the newspapers.
- In your routine life, farm products of which regions do you use ? Prepare its list.
- Listen to the programmes on agriculture on Radio, Doordarshan or other channels, watch them and write names of five programmes.
- Collect information about the crops of Gujarat from the websites of Agricultural Universities of Gujarat.

‘There is water hence there is a life.’ Any type of life cannot be imagined on the earth without the water. There is no other option for water resource. The list of its usages is very long. Entire biotic world uses water to sustain itself. The prosperity of any nation depends on its agriculture and the amount of water it uses in it. Water is also required for drinking, domestic uses and in industries. Water shortage is being created because of the rate and volume at which it is being used by increasing population and for development projects. With this consideration, it is necessary to use water sparingly. Water is a limited resource. No other resource can be used in its place. If the environment exists, it is because of water, so water is an inseparable part of life.

Sources of water :

There are three sources of water : (1) Rain water (2) Surface water (3) Ground water

(1) Rain water : 'Rain' is the original source of water on the earth. River, lakes, streams, well etc. are secondary sources. All these sources exist due to rainfall.

(2) Surface water : The water on the surface the earth is found in the form of river, lake, pond, sea streams etc. It is called surface water. Rivers are the main source of surface water.

(3) Ground water : Ground water has an important place among the sources of water. Ground water is obtained due to the process of water absorbed by the lower strata of the land. The volume of ground water is unlimited. In the Northern plains of India, there is about 42 % of ground water. In Southern India, there is less of ground water due to the plateau and mountainous region. Ground water is utilised maximum for irrigation.

Water resources and uses

Irrigation : About 84 % of water in India is useful for irrigation, e.g. about 1500 litres of water is required to produce 1kg. of wheat. Paddy, jute and sugarcane crops require more water. Water is being used for irrigation since ancient times. In second century, the famous, Grand Anicut canal, was constructed across the river Kaveri. In 1882, the Eastern Yamuna Canal was constructed in Uttar Pradesh.

There are three mediums of irrigation in India. These are : (1) wells and tube wells (2) canals (3) ponds. Out of these, wells and canals are major mediums of irrigation. Canals and ponds come at second and third place respectively. Canal irrigation is practiced in the vast plains of Satluj, Ganga and Yamuna and also in the delta regions of Mahanadi, Godavari, Krishna and Kaveri rivers in the Eastern plains. Wells and tube wells are very common in alluvial plains. Irrigation by ponds is practiced more in the eastern and southern states.

Multi-purpose Projects : Many large and small rivers flow in India. Water transportation is very rich in India. This is because its physiography is such that many rivers merge with other rivers and empty their water into the sea. With the idea that this water may be harnessed for various purposes, multi-purpose projects are planned on many rivers. A multi-purpose project means to solve various problems associated with river valleys. It includes flood control, prevention of soil erosion, water for drinking and irrigation, industries, water provided to settlements, generation of electricity, internal water transportation, entertainment, wild life protection and development of fishery etc.

Major Multi-purpose Projects of India

Multi-purpose Project	River	States to be benefitted
Bhakhra-Nangal	Satluj	Punjab, Haryana, Rajasthan
Kosi	Kosi	Bihar
Damodar valley	Damodar	Jharkhand, West Bengal
Hirakud	Mahanadi	Odisha
Chambal valley	Chambal	Madhya Pradesh, Rajasthan
Nagarjunsagar	Krishna	Andhra Pradesh, Telangana
Krishnarajsagar	Kaveri	Karnataka, Tamil Nadu
Tungabhadra	Tungabhadra	Karnataka, Andhra Pradesh
Narmada Valley (Sardar Sarovar)	Narmada	Madhya Pradesh, Gujarat, Rajasthan, Maharashtra
Kadana-Vanakbori	Mahisagar	Gujarat
Ukai - kakrapar	Tapi	Gujarat
Dharoi	Sabarmati	Gujarat

Distribution of area under irrigation :

There is a difference regarding the area under irrigation in every State. Coastal districts in Andhra Pradesh, delta regions of Godavari and Krishna rivers, Mahanadi delta in Odisha, Kaveri delta in Tamil Nadu, Punjab, Haryana and Western Uttar Pradesh etc. are regions of intensive irrigation of the country.

After Independence, the irrigated area in India has increased four times. Irrigation is practiced in about 38 % of net sown area.

There is a difference in the irrigated area of different States. In Mizoram, 7.3 % area of the total area sown is under irrigation while it is 90.8% in Punjab. There is a vast difference between the total area under irrigation with the total area sown. More than 40% area of the total area sown is under irrigation in Punjab, Haryana, Uttar Pradesh, Bihar, Jammu-Kashmir, Tamil Nadu and Manipur.

Water crisis

Water is a natural gift. Water shortage is constantly intensified due to increasing demand for grains by increasing population, to grow cash crops, increasing urbanization and changing life styles of people. The position of water supply and the inequality in the local distribution are challenges to human interests, livelihood and economic development.

Now-a-days, the water crisis is in very alarming stage in arid regions of Western Rajasthan and the interior area of southern peninsular plateau. The quality of water has deteriorated in many villages and some towns. Many water-borne diseases spread due to this.

Availability of pure potable water is the basic need of life. Apart from the attempts made to increase the availability of potable water, there is a large difference between the demand of water and its supply. Even to-day, there is a severe shortage of drinking water in about 8% towns in India. It needs to be done to provide clean drinkable water to about 50 % of villages of the country.

There has been a large increase in the irrigation facilities in India. However, $\frac{2}{3}$ of agricultural region still depends on rain water. In recent times, the ground water level has gone down considerably due to more and more water is extracted through wells and tube wells. As a result, the ground water resource has decreased. The country is facing severe problems as some states extract ground water in excess volume. Serious problems like reduction in the quality of water and increasing scarcity have to be faced. Besides agriculture, water is used in industries in uncontrolled quantity. Main sources of water pollution are polluted water of domestic uses and industries.

Management and conservation of water resources

We all know that the available water is in limited quantity. Its distribution is also unequal. Along with there is a problem of water pollution. That is why it is necessary to use the water economically and to conserve the available water. 'Water' is such a resource which is directly associated with the entire living organisms. The remedies to conserve water are to be done at different stages. The maintenance of water resources is known as 'water conservation'. Some general remedies of water conservation are as follows. More construction of reservoirs for water storage, connecting two river basins and bringing the ground water at higher level. Water is a national resource.

Watershed development

Watershed is a natural unit and it is used for synthesized development in smaller natural units according to the convenience. A river basin is such an area wherein the water of a river, along with the water of its branches forms a watershed. A watershed region is ultimately a river basin only. The water during the rainy season flows forward and finally meets any river. The development of a watershed is an overall approach of development. It includes the programmes like soil and humidity conservation, water storage, tree plantation, forestation, horticulture, development of pastureland, renewal of collective resource. In all these programmes the land capability and the requirements of people have to be considered. It needs the participation of local people. Many schemes are planned by the State and the Central Government.

Rain Water Harvesting

Special methods to collect the rainwater and conserve it include the construction of wells, small dams, khet talavadi (farm ponds) etc. Water is conserved through these mediums. This also raises the ground water level. This may fulfil the requirements of domestic use and agriculture.

Main objectives of rain water harvesting :

- To increase the capacity to conserve the ground water and increase the underground water table.
- Reduce the water pollution.
- Improve the quality of ground water.
- To save the land routes from water logging.
- Reduce the surface run off of water.
- Fulfil the requirement of domestic water requirements during summer and during long dry spells.
- Fulfil the increasing demand of water.
- Make arrangement to store rain water in underground tanks in multi-storey residence in large cities or arrangement should be made so that the water percolates in the ground.

Things to know

Water of the village, water at the border of the village at the border

“Bedaj village solves the water problem by water storage.”

The so called backward villagers of Bedaj in Aravalli district understood the value of water and evolved the understanding of water harvesting techniques. They converted the entire region into greenery by conserving about 2.25 crore litres (2 lakhs cubic metres) of rain water. They created an association of the villagers and opted to solve the primary problem of water and they got the cooperation of social institutions of the village. With the cooperation of the institution the people of Bedaj village were made aware and they all agreed not to allow the water of the village and to flow out of the village. The village pond, spread in only 7 vighas, was deepened by 20 to 22 feet. With the financial assistance from the institution, 10 check dams, 11 farm ponds drip in 25 hectars, pipeline in 10 hectars, deep ploughs, small dams were constructed. About 2 lakh cubic metres of rain water was stopped and stored. The stony and dry land was made greener. This pointed a way to others. About 154 vigha of land in Bedaj area got the new facility of water supply. Milk production increased by 12.5% in one year, Water storage increased by 20 to 30 %, due to which the farm production also increased. Today, zaid crops are ruffling in 136 vigha of land of Bedaj for water in Megharaj.

Following points should be considered for water management :

- Use water economically for gardens, vehicles, in toilets and wash basins.
- Public awareness should be created. Participation in water conservation and its skilled management should be increased.
- If possible recycle the used water.
- Save the reservoirs from pollution.
- Increase the use of all units of water harvesting strcutures like wells, tube wells, khet talavadi etc.
- Keep a watch on the those units which are using ground water.
- Prevent the deterioration of water storage units and repair the damaged pipe lines immediately to stop water pollution.

Uniform steps can not be applied for every area. Local people should be included with their due cooperation for the development and management of water resources of any special region.

Thus, water should be utilised economically. Various methods are being implemented for water conservation. Whether the rainfall occurs or not, the water crisis is pending on us. Whether it is a farm or a water-place in the house, we have to conserve every drop of water. Water is the life.

Exercise

1. Answer the following questions in details :

- (1) State the remedies to conserve the water.
- (2) Describe the circumstances creating water crisis in India.
- (3) Give information about rain water harvesting.

2. Write to-the-point answers of the following questions :

- (1) State the importance of multi-purpose projects.
- (2) Write about the distribution of irrigation.

3. Write answers for the following questions in brief :

- (1) State the uses of ground water.
- (2) Which factors should be considered for water management ?

4. Select the correct option from the options given for the following questions and write answer.

- (1) Which is the main source of surface water ?
(A) Rainfall (B) Ponds (C) Rivers (D) Lakes
- (2) Connect the following multi-purpose projects with the beneficiary states and select the correct order.

(1) Bhakhara-nangal	(a) Bihar
(2) Kosi	(b) Punjab
(3) Nagarjunsagar	(c) Gujarat
(4) Narmada	(d) Andhra Pradesh

(A) (1 - b), (2 - a), (3 - c), (4 - d) (B) (1 - b), (2 - a), (3 - d), (4 - c)
(C) (1 - d), (2 - c), (3 - b), (4 - a) (D) (1 - c), (2 - d), (3 - a), (4 - b)
- (3) Which of the following statements is not true ?
(A) Compared to canals, the irrigation through wells and tube wells is more prevalent in india.
(B) Himalay an rivers are called seasonal rivers.
(C) Water which is percolated from the surface within the ground is called ground water.
(D) Punjab and Haryana are leading states in irrigation.
- (4) Which of the statements regarding 'Khet Talavadi' presented in the classroom during the student's debate is true ?
(A) Jay : It is an important source to obtain water for industries.
(B) Yash : It is an important part of 'Grow more trees' movement.
(C) Yug : It is a modern technique to increase soil erosion.
(D) Daksh : It is a part of rainwater harvesting.
- (5) After arranging the following multi-purpose projects from North to South, which option seems to be correct ?
(A) Chambal Valley, Bhakhara-nangal, Narmada Valley, Nagarjunsagar
(B) Bhakhra-nangal, Nagarjunsagar, Narmada Valley, Chambal Valley
(C) Nagarjunsagar, Chambal Valley, Narmada Valley, Nagarjunsagar
(D) Bhakhra-nangal, Chambal Valley, Narmada Valley, Nagarjunsagar

Activity

- A visit to a multi-purpose project located nearby your area.
- Know from your teacher about different sources of water of the nation, used in different fields.
- Collect information about the source of water provided to your village or town from your guardian.
- Prepare charts about important songs or concocted stories about the importance of water.
- Collect information about water conservation from the newspapers and prepare an album about the photographs, write-ups, slogans or Government notification etc.

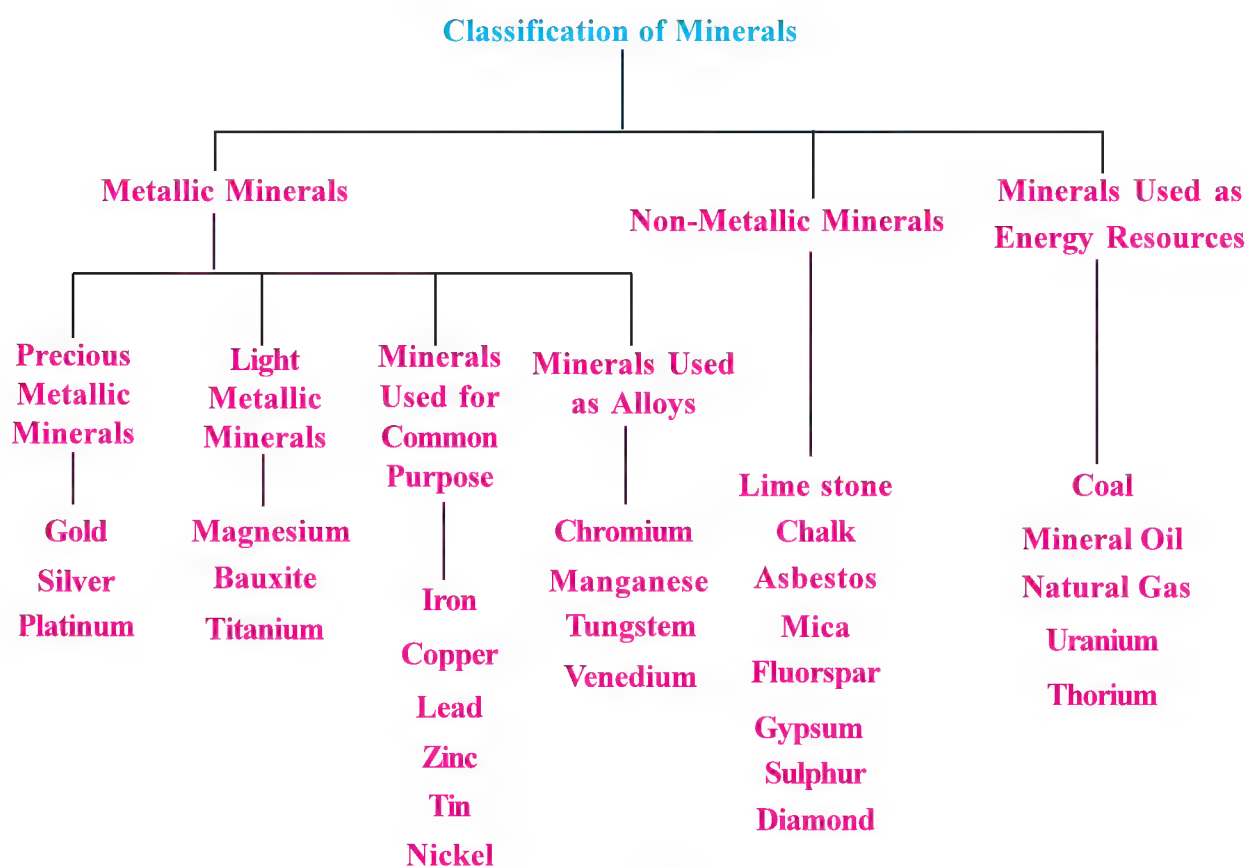


Requirements of primitive man were limited. He worked only to sustain his life. Man conquered the heights of evolution. Minerals have a large role in the human progress. Mineral is a natural resource. The human evolution process is divided into various ages, such as stone age, bronze age, iron age and modern age i.e. atomic age. In stone age, man used stones for hunting but now he is travelling into space. Man's relation with minerals is very old and strong. Today, minerals are considered to be the backbone of economic development of any nation. U.S. and Russia have become world powers only due to proper use of minerals. Both countries are rich in variety of minerals and prosperity. Even though our country has the potential huge reserves of minerals, a long term dependence and the absence of technical knowledge resulted in lesser economic development.

Mineral :

The matter which is formed due to inorganic process and has a certain chemical composition is called a mineral.

This is a result of abiotic process which took place in the interior of the earth since the infinite time. The solid, liquid or gaseous matter, which is formed due to specific abiotic process within the rocks in the interior of the earth, has a certain chemical composition and homogeneous constitution and specific atomic structure is called 'mineral.' Iron, Manganese, Gold, Silver etc. are solid minerals, Mercury, Petroleum etc. are liquid minerals and natural gas is included as gaseous mineral. The type of minerals that are available from the interior of the earth depends on how the crust of the earth originated; e.g. Iron, Copper, Zinc, Gold and Silver etc. are found in igneous rocks. Diamonds are found in metamorphic rocks.



Figur 12.1

Iron Ore : Iron is considered to be the base of industrial development of modern world. It is used very widely in the making of small pins to large machines, cars, trucks, ships, railway, bridges, buildings and weapons. It is cheaper, strong and durable. It is easily available in most of the countries. It has a virtue to mix with other minerals hence it is considered to be an important mineral.

Iron is found in impure condition so it is mixed with coke and lime and heated in large furnaces for refining. The pure iron thus obtained is known as Pig iron.

There are four types of iron ore found in India : (1) Hematite (2) Magnetite (3) Limonite and (4) Siderite.

Maximum iron ore is obtained from Karnataka state in India. Orissa, Jharkhand, Chhattisgarh and Andhra Pradesh are other producers respectively. Besides, Iron ore is also found in Goa, Rajasthan, Tamil Nadu, Maharashtra, Madhya Pradesh, Kerala, Uttar Pradesh and Assam states.

Manganese : It is an important mineral for iron and steel industry. It is mainly used to make steel from iron. Its other uses are in chemical industry such as bleaching powder, insecticides, dry battery cells and tiles. It is also useful in leather industry, glass industry, matchbox industry, photography, china clay utensils and coloured bricks. The rails made out of steel and rods become more flexible and strong when manganese is mixed with it. Steel is used in the machines to break rocks and also in grinding machines.

Odisha, Karnataka, Madhya Pradesh and Goa can be counted as major states of manganese producers. Besides, Manganese is also obtained from Andhra Pradesh, Jharkhand, Rajasthan and Gujarat states.

Copper : Copper is used since primitive times. This was the first mineral used by man. It is more important because of its mixing property. It forms bell metal when mixed with Tin and makes Brass when mixed with Zinc. It is used mostly in the making of electric equipment, telephone, radio, television, refrigerator and air conditioners. It is good conductor of electricity. It is also used in insecticides, explosive, coloured glass, coins and in printing.

Copper is produced mainly by Jharkhand, Madhya Pradesh and Rajasthan states in India. Sikkim and Andhra Pradesh also produced it. Copper is also found in Bihar, Karnataka, Maharashtra, Tamil Nadu, Himachal Pradesh and Uttarakhand states.

Bauxite : This is an aluminium ore. It was found for the first time at Les Baux in 1921 in France. Aluminium is obtained from Bauxite. It is useful due to its special properties. It is very light in weight, strong, durable, good conductor of electricity, rust-free and easily ductile. It is widely used in the making of domestic utensils, electrical gadgets, colours and in ship building.

Bauxite is obtained from Odisha, Chhattisgarh, Maharashtra, Jharkhand and Gujarat. This mineral is found in the geological structure of Deccan Trap. Ranchi in Jharkhand and Jamnagar, Bhavnagar, Junagadh, Amreli, Surat and Sabarkantha districts in Gujarat produce Bauxite.

Mica : India ranks first in the world in Mica production. It is fire resistant and a bad conductor of electricity, so it is used in making electrical goods, such as electric motors, dynamo, radio, telephone, cars, steamers etc.

Bihar, Jharkhand, Andhra Pradesh and Rajasthan are major producers of Mica in India. Mica is also found in Karnataka, West Bengal and Tamil Nadu. There is a large reserve of muscovite type of Mica found in India.

Lead : The Lead ore is called galena. It is soft and heavy in weight. It is used to make alloys, electric wires, colour, weapons, glass, rubber and storage battery.

In India lead is available in Rajasthan, Andhra Pradesh and Tamil Nadu. It is also found in West Bengal, Madhya Pradesh, Uttar Pradesh, Orissa, Maharashtra, Meghalaya and Sikkim states.

Even though Mica is produced in sufficient quantity, our demands are not met with, so it has to be imported.

Lime Stone : Lime stone is used in large quantity in the production of cement. Besides that it is also used for iron melting, chemical industry, soda ash, soap, colour-chemicals, building construction, paper and in sugar refining.

Andhra Pradesh, Rajasthan, Madhya Pradesh, Gujarat and Tamil Nadu produce about 70 % of Lime Stone of the country. Besides these, Chhattisgarh, Karnataka, Maharashtra, Himachal Pradesh are other states producing Lime stone.

In Gujarat. Jamnagar, Kachchh, Amreli and Kheda districts are major Lime stone producing districts. Other districts which also have Lime stone reserves are Banaskantha, Mahesana, Sabarkantha, Vadodara, Panchmahal, Bharuch, Narmada, Surat, Bhavnagar and Rajkot. The rocks in Jamnagar districts contain about 97 % lime content.

Minerals of energy resources

Energy resources hold an important place in the economic development of any nation. They keep the industries and the economy throbbing. These minerals include Coal, Mineral oil, Natural gas and Atomic minerals.

Classification of energy resources

Energy resources can be classified in different ways, such as conventional and non-conventional energy resources, commercial and non-commercial energy resources.

Coal, Mineral oil, Natural gas and Atomic minerals are considered as conventional or commercial energy resources. These are also non-renewable resources. Electricity is generated through these resources. Hydro energy, wind energy, solar energy, bio-gas, geothermal energy and tidal energy are non-conventional energy resources. These are also renewable resources. Peat coal, firewood, dung etc. are non-commercial energy resources.

Coal : Man has been using coal as an energy resource since ancient times. A question may arise in our mind as how the coal was formed in the interior of the earth ? In earlier times, vegetation prevailed

over the earth. Due to tectonic movements, this vegetation was buried in the interior. As a result, the trees containing carbon contents and some animals underwent gradual combustion due to the internal heat and pressure. Due to this, the vegetation was transformed into coal. The period before about 25 crore years known as carboniferous period. During this time, the gradual combustion of trees took place and it led to the formation of coal.

Usage of coal increased with the invention of steam engine. Means of transportation like railway and steamer were now easy to use. With the invention of electricity, coal became an important mineral for producing thermal electricity.

Some by products are available from coal, like coal-tar, ammonia gas, benzoyl and crude oil.

It is available from stratified rocks. On the basis of carbon, coal can be divided into four types : (1) Anthracite coal (2) Bituminous coal (3) Lignite coal and (4) Peat coal.

Indian coal reserves : Major states producing coal in India are Jharkhand, Orissa, West Bengal, Chhatisgarh, Madhya Pradesh and Jammu Kashmir. Besides, Rajasthan, Tamil Nadu, Assam and Gujarat also produce coal.

Coal fields of Gujarat are located in Kachchh, Bharuch, Mahesana, Bhavnagar and Surat. Lignite coal is available here.

Mineral oil : It is found in the stratified rock strata containing lime stone, shale etc. In ancient times, animals and vegetation were buried in the interior of the earth and were converted into hydro-carbons. This form was in almost liquid form. Due to tectonic movements the layers of these forms were gradually elevated towards the surface. Some of them went towards the sea floor while some strata came up from the interior.

In 1866, first oil well was dug in Assam to find out oil. After mineral oil was obtained from Makum (Assam) in 1867, more oil fields were also located in different parts of India.

The oil fields of India are divided into five zones : (1) Oil fields of North-East (2) Oil fields of Gujarat (3) Oil fields of Bombay High (4) Oil fields of Eastern Coast (5) Oil fields of Rajasthan.

Oil fields of Gujarat :

After Independence, oil was first struck at Lunej of Kheda (now in Anand dist) district in 1958. There after, oil was found at Ankleshwar, Mahesana, Kalol, Navagam, Kosamba, Sanand, Ahmedabad, Gandhinagar, Vadodara, Bharuch and Bhavnagar.

Mineral oil refining :

In India, the refineries are located at Guwahati, Barauni, Koyali, Kochi, Chennai, Mathura, Kolkata and Haldia. The largest oil refinery of the world is located at Jamnagar in Gujarat.

Natural Gas : Natural gas is associated with mineral oil. It is separated from it. It is cheaper and considered to be a non-pollutant source of energy. The reserves of natural gas in our country are found in Khambhat basin, Kaveri basin and Jaisalmer (Rajasthan). Ankleshwar of Gujarat is considered to have the largest natural gas reserve.

Non-conventional Energy Sources :

Resources like coal or mineral oil are available in limited quantity. Attempts have started to conserve them for a longer time. Wind energy, solar energy, bio-gas, tidal energy and geothermal energy are included as alternate resources. These are all renewable energy resources. Some identify them as inexhaustible resources.

Many countries in the world have taken steps in this direction. U.S., Russia, France, Canada, Australia, Netherlands and Japan are advancing in this field effectively. In 1981, Commission for Additional Sources of Energy (CASE) was established in India. Gujarat Energy Development Agency (GEDA) is working in this direction.

Solar Energy : Sun is considered to be the main source of energy on the earth. It is visible during most of the days of the year. The biosphere on the earth throbs due to solar energy. India has progressed well due to solar energy technology. Solar cooker is used for cooking, solar heater for heating the water and solar panels are used to generate electricity.

Gujarat state gets maximum solar energy in India. GEDA (Gujarat Energy Development Agency) has established a solar cold storage near Chhani (Vadodra) with a capacity of 10 tonnes. Today, solar panels are fixed to provide street lights in those villages without electricity, for irrigation to the farms and for television. A solar energy plant has been installed at Madhopur near Bhuj in Gujarat for desalination of saline ocean water. Use of equipment working on solar energy is on increase in the country today.

Wind Energy : The Sun provides thermal energy on the surface of the earth. Winds are formed due to the high and low pressure pockets formed in the atmosphere. In our country, wind energy is obtained through the windmills at the sea coasts and in open space. India has become fifth country in the world to produce energy through wind.

Gujarat, Tamil Nadu, Maharashtra, Andhra Pradesh, Odisha, Karnataka, Madhya Pradesh and Kerala states in India produce wind energy.

In Gujarat, Wind farms are operated at Lambha village near Jamnagar and at the sea coast near Mandavi in Kachchh. Electricity is generated at the windmills founded in Devbhumi Dwarka, Jamnagar, Kachchh, Rajkot, Porbandar districts.

Bio-Gas : Useless agriculture materials, molasses (remains of sugar cane), other vegetation, dung and human excreta are used to produce bio-gas. The methane gas is released after these material get decomposed. This is an inflammable gas. Precious fertilizer without any virus is obtained after it is used up. Thus, the energy as well as fertilizer both can be obtained. This is a non-conventional source of energy resource. Solar energy and bio-gas can change the traditional life style of villages of India. Villages can be cleaner and the scarcity of their domestic energy can be removed.

Uttar Pradesh and Gujarat hold first and second places respectively in the bio-gas production. The largest bio-gas plant has been installed at Maithan near Siddhpur in Gujarat which is run on collective basis. Other bio-gas plants in operational conditions are located at Rudratol of Daskroi taluka of Ahmedabad and at Dantiwada in Banaskantha districts. Moreover, plants which are used increasingly and funded by individual or collectively.

Geothermal Energy : The thermal energy from the interior of the earth comes to the surface of the earth in the form of geysers or hot springs. Due to heat, these are transformed into vapour. This vapour exerts upward pressure on the ground water which releases energy. By using this energy, the geothermal energy is obtained.

Hot water springs in Gujarat are located at Lasundra, Unai, Tuva and at Tulsishyam. There are possibilities of getting geothermal energy from them.

Tidal Energy : The process of tides and ebbs continues constantly in all oceans on the surface of

the earth due to the gravitational force exerted by the sun and the moon. Man utilises this power of water in generating electricity. Tidal waters have more power. A turbine is connected with it to generate electricity. In 1910, France started this project to get electricity with the help of tides and ebbs. As India has a long coastline, it has the potential to generate such energy.

This project has been started in the Gulf of Kachchh and the Gulf of Kambhat.

Mineral preservation :

Minerals are necessary for the existence and development of human beings. Man himself has to think about certain points about this. Man has to think about some aspects for the preservation of minerals. What is preservation ? The efficient and well planned use of minerals is the preservation of minerals. Today, every nation wants to increase its export for its own development. Minerals are used in unrestricted manner by exporting them to earn foreign exchange for its own development. That is why the preservation of minerals has become necessary.

Remedies for mineral preservation :

- (1) Use of proper technology : If a proper technology is used to obtain the minerals, the wastage of minerals can be reduced.
- (2) Recycling : The scrap of minerals like iron, copper, aluminium, and tin should be reused.
- (3) Alternate use of minerals : Alternate option should be found out for those minerals which are found in less quantity; e.g. solar energy instead of electricity, aluminium instead of copper, CNG instead of petrol etc.
- (4) Use of non-conventional means : The non-conventional sources like water, solar, wind, bio-gas etc. should be used increasingly.
- (5) Sustainability : Maintain the purity of the environment and gift the clean environment to the future generation. Attempts should be made for pollution-free environment.
- (6) After the reserves of the minerals is calculated, it can be used for a long period by planning it properly.

It is necessary to preserve and enhance the minerals.

Exercise

1. Answer the following questions in details :

- (1) Give a detail information about mineral oil.
- (2) State the remedies to preserve the minerals.
- (3) Write about electricity in brief.

2. Answer the following questions pointwise :

- (1) State the uses of limestone.
- (2) State about Mica.
- (3) Mention the utility of Copper.
- (4) Write about the classification of minerals.

3. Answer the following questions in brief :

- (1) 'Modern age is known as mineral age.' - Why ?
- (2) Why there is an increase in the usage of non-conventional energy today ?
- (3) State the major places where iron is available.
- (4) Which states in India produce manganese ?

4. Select the correct option from the options given for the following questions and write answer :

- (1) A school in Palanpur wants to show a bio-gas plant to its students of Std. 10. Which nearest place will it select ?
(A) Dhuvaran (B) Dantiwada (C) Maithan (D) Undrel
- (2) Some officers from Government of India want to visit Gujarat to survey the possibility of using the geothermal energy in future in Gujarat. Which place they should avoid. ?
(A) Tulsishyam (B) Unai
(C) Saputara (D) Lasundra
- (3) Match the correct pairs and find the answer :

(a) Silver, platinum	(1) A mineral of common use
(b) Magnesium, titanium	(2) A mineral used in mixed form
(c) Lead, nickel	(3) Precious metallic mineral
(d) Tungsten, vanadium	(4) Light metallic mineral
(A) (a - 1), (b - 3), (c - 2), (d - 4)	(B) (a - 3), (b - 4), (c - 1), (d - 2)
(C) (a - 2), (b - 2), (c - 4), (d - 3)	(D) (a - 4), (b - 1), (c - 3), (d - 2)

Activity

- Arrange a visit to a mine to get information about mining during the annual tour of your school.
- Collect the pictures about mining activity and prepare an album.
- Make a list of the things which are made from minerals and used in home or in the school.



The process in which man can change the natural resources into usable conditions according to his intellectual, cultural and economic capacity is called “Industry”. In India, the industrial traditions are found since Indus Valley civilization. At that time, India used to prepare cotton textile, clay utensils, things of bell metal and beads. Upto eighteenth century, India was ahead in ship building industry. India was also ahead in handicraft and in cottage industries. There was a heavy demand of Indian cotton cloth, muslin cloth, metalled utensils and ornaments.

With the beginning of Industrial revolution in England, the Britishers used to take away raw material, especially raw cotton. They used to follow the policy of selling the goods manufactured in England at a higher price in India so the Indian market would collapse. This damaged the textile industry and the Indian craftsman of India heavily.

Importance of Industries

Today, the existence of nations depends only on the development of industries. Economic development without the industrial progress will be impossible. Those countries which have developed more industrially have strengthened their economy equally. Countries like United States of America, Russia, Japan, South Korea are prosperous and developed nations on the basis of their industrial development. Those countries, where industries are either not developed or are less developed, are not capable to harness the natural resources as industrial raw material. They have to sell their natural resources at a cheaper price and purchase the things made of the same raw material from foreigners at a higher price. Manufacturing industries contribute about 29% of the national production of India.

The administrative policy of British rule broke the backbone of Indian industrial structure. During slavery period industries with modern methods could not be started in India. In 1853, the first industrial complex of iron furnace based on charcoal was founded, but it failed. First successful attempt was made in 1854 in cotton textile industry. Thereafter a jute mill was established in 1855 at Rishra near Kolkata. In 1874, a factory was founded at Kulti for making iron ore which was closed after few years. It was restarted in 1881. In 1907, a new dimension was provided with the founding of Tata Iron and Steel Company at Jamshedpur.

Classification of Industries

Industries are divided on the basis of human labour, ownership and the sources of raw material. On the basis of human labour, the industries can be divided as “small scale” and “large scale” industries. Those Industries where more employment is available is known as large scale industry, e.g. cotton textile industry. When an industry is under the direction of an individual’s ownership and the number of labourers is also less, it is called small scale industry, e.g. sugar (khandasari) industry. Besides these, industries can be classified as private, public, collaborative and cooperative groups. So industries can be classified in many ways. On the basis of the source of the raw material, the industries can be classified into agro based industries and mineral based industries.

Agro based Industries

Cotton textile, jute, silk, woollen textile, sugar, paper etc. are industries based on the raw material obtained from activity based on agriculture.

Cotton Textile Industry

Garment industry has an important place in the industrial economy of India. This industry

provides employment to about 3.5 crore people. Textile Industry is the industry which provides maximum employment in the country. India holds second rank after China in the export of cotton textiles. It is the main industry from production and employment points of view.

First cotton mill was established in Mumbai. Thereafter, Shahpur Mills and Calico mills were established in Ahmedabad in Gujarat. In the initial years, the cotton textile mills were established in Mumbai and Ahmedabad. These mills were established due to cheap cotton, availability of labour, transport facilities, ports for export and favourable markets. Today, cotton textile mills are located in about 100 cities of the country. Main traditional and important centres at present are Mumbai, Ahmedabad, Bhivandi, Solapur, Kolhapur, Nagpur, Indore and Ujjain.

There are more mills in Mumbai in Maharashtra, hence it is also called as Cottonopolis of India. The industry is also established at Pune, Kolhapur, Aurangabad, Jalgaon cities. In Gujarat, Ahmedabad is called as “Manchester of the East” or “Denim city of India”. Besides, cities like Vadodara, Kalol, Bharuch, Surat, Porbandar, Bhavnagar, Rajkot etc. are also included. Coimbatore is the main centre of Tamil Nadu. Chennai and Madurai cities are also included. Main centres in Uttar Pradesh are Kanpur, Itawah, Agra, Lucknow etc. Indore, Gwalior, Ujjain and Devas are main centres of this industries in Madhya Pradesh. In West Bengal Kolkata, Howrah, Murshidabad are major centres. Cotton Textile industry was setup also in Rajasthan, Punjab and Haryana. Extensive market centres, transportation, banks and electricity have contributed considerably in decentralization of this industry.

Today, cotton textile industry is facing a tough competition due to the factors like inadequate supply of best variety of cotton, use of old machinery, irregular electric supply, competition from artificial fibre cloth in the market and keen competition in global markets.

India exports cotton textile cloth to Russia, United Kingdom, United States of America, Sudan, Nepal, Australia, France and South African countries.

Jute Textile Industry

Jute is second ranked major industry of India. India holds first place in the production of jute and goods made from jute. India is at second place after Bangladesh in the export of Jute. Of the total jute production of the country, West Bengal produces about 80%, Andhra Pradesh about 10% and the rest is produced by Bihar, Uttar Pradesh, Madhya Pradesh, Odisha, Assam and Tripura.

Much water is needed to purify jute. So most the mills are located on the bank of Hoogli river. This industry is concentrated in West Bengal due to cheap labour force, banks and insurance coverage, port for export facility etc.

Today, the demand for jute has decreased because of other options in packing material for goods. Jute industry is facing such problems like more cost of production and decreasing demand of jute in international markets.

Silk Textile Industry

Silk production has a long tradition. After China, India ranks second in the world in silk production. In India, four types of silk are produced. These are mulberry, eri, tasar and muga.

Today there are about 300 silk weaving mills in India. Major states producing silk are Karnataka, Madhya Pradesh, West Bengal, Tamil Nadu, Punjab and Jammu-Kashmir. Silken clothes are exported to Europe, Africa and Gulf countries. Besides, these are also exported to Germany, Singapore, U.S.A., Kuwait, Malaysia and Russia. In international market, Indian silk is facing a tough competition from China.

Woollen Textiles Industry

As a cottage industry, the history of woollen textile industry is very old. Maximum woollen textile mills are in Punjab. Next comes Maharashtra. There are woollen textile mills in Uttar Pradesh also. Ahmedabad and Jamnagar in Gujarat are centres of woollen clothes. Other major centres are Bikaner and Jaipur, in Rajasthan, Srinagar in Jammu-Kashmir and Bengaluru in Karnataka. India also produced woollen carpets. Woollen cloth is exported to America, Canada, Germany, France, Russia etc.

Synthetic Textiles Industry

The cloth made from synthetic fibre made by man is strong, durable and does not retain wrinkles, hence this industry has developed very much. The cotton fibres are mixed with synthetic fibres to get mixed variety of cloth. Main Producer of this industry are Kerala, Gujarat, Uttar Pradesh, West Bengal, Tamil Nadu etc. Other centres are Surat, Kanpur, Mumbai, Ahmedabad, Kolkata, Chennai, Modinagar etc.

Sugar Industry

Making Jaggery from the sugarcane juice is very old industry in India. Sugar industry stands second after textiles in agrarian industries in India. After reaping the crop of sugarcane, it has to be squeezed within twenty four hours so that the amount of water is not reduced, otherwise its sugar contents will decrease. That is why the sugar factories are located near sugarcane growing centres. Sugar factories are located in Maharashtra, Uttar Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Gujarat etc. This industry is developed in Gujarat at Bardoli, Gandevi, Surat, Navsari, Vyara, Bharuch, Bharuch, Kodinar and Talala Gir.

Paper Industry

Paper is made out of soft wood, bamboo, grass, molasses etc. It is produced in Andhra Pradesh, Maharashtra, West Bengal, Odisha, Karnataka, Gujarat, Madhya Pradesh, Chhattisgarh, Tamil Nadu, Haryana etc.

Mineral Based Industries

Those industries wherein minerals are used as raw material are known as mineral based industries. Industries such as iron and steel industry, aluminium industry, copper, chemical, fertilizers, cement, means of transportation and electrical goods are mineral based industries.

Iron and Steel Industry

Iron and Steel Industry is the axis of modern industrial and the economic development. It is considered to be the base industry. Machines and other constructions are produced from its productions. This can be also considered to be a key industry.

The process of making iron is very old in India. Iron was imported from India to make swords in Damascus. The first factory in India to produce iron was established at Portonova in Tamil Nadu. It was closed due to some reasons. A successful production of raw iron was made at Kulti. In 1907, the factory established at Jamshedpur started producing iron-steel on very a large scale. Factories were established at Bernpur in West Bengal and at Bhadravati in Karnataka. Iron and steel factories were also established in Bhilai, Rourkela and at Durgapur. Other large scale factories

were founded at Bokaro, Vishakapatnam and Salem. Iron ore, coal, lime stone and manganese are used as raw material for producing iron-steel. A mini steel plant has been found near Hajira in Gujarat. The administration of all iron-steel factories except Tata is handed over to “Steel Authority of India Limited [S.A.I.L.]. India ranks fifth in the world in iron and steel production.



13.2 Centres of Iron and Steel Industry in India

Aluminium Refining Industry

After iron and steel industry, aluminium refining is another important industry. This mineral is light in weight, strong, malleable, smooth conductor of electricity and rustproof. Bauxite is the aluminium ore. Other minerals are mixed with aluminium which is useful in making cars, railway, aeroplanes and machines. About 40 to 50% of expenses is incurred in electricity. So this Industry is founded where hydro-electricity and bauxite are available easily.

Factories producing aluminium are established in Odisha, West Bengal, Kerala, Uttar Pradesh, Chhattisgarh, Maharashtra and Tamil Nadu.

Copper Refining

The usage of copper has increased due its properties such as easy conductor of electricity and it can be mixed with other minerals easily. Copper is useful in electricity industry, in making of refrigerator, air-conditioner, automobiles, radiators, domestic utensils etc. First Copper refining unit of India was founded by Indian Copper Corporation (ICC) at Ghatshila in Jharkhand. In 1972, ICC was handed over to Hindustan Copper Limited (HCL). Besides HCL today, copper is produced by private sector also. Yet, the domestic production is not enough so it has to be imported.

Chemical Industry

The position of chemical industry in india is important. Chemicals are of two types : organic and inorganic chemicals. Petrochemicals is the main organic chemical industry. It is used in artificial fibers, artificial rubber, plastic goods, colour, chemicals and in medicines. Organic chemical industry is founded near oil refineries and petro-chemical centres. India has an important position in the world in the insecticide industry. Gujarat leads in the country in chemical industry. Ahmedabad, Vadodara, Ankleshwar, Bharuch etc. are major centres of chemical industry.

Chemical Fertilizer Industry

First chemical fertilizer factory of India was established in 1906 at Ranipat in Tamil Nadu. The development of this industry started when fertilizer corporation of India started its factory at Sindari. This industry is centred in Gujarat, Tamil Nadu, Uttar Pradesh, Punjab and Kerala. In Gujarat, the factories producing chemical fertilizers are located at Kalol, Kandla, Hajira, Bharuch, Vadodara etc.

Plastic Industry

Plastic industry is also known as 'Sunrise Industry'. There has been a constant increase in the demand of raw material for plastic. Because it is water proof and can fit into any mould, it is used in packing chemicals, textiles, building construction, vehicle manufacturing, electronics etc. Important centres producing plastic are Delhi, Mumbai, Kolkata, Bengaluru, Vadodara, Vapi, Kanpur, Coimbatore and Chennai.

Cement Industry

Cement is inevitable in the construction of, roads, dams etc. India ranks second after China in cement production. It produces about 6% of the world production. Lime stone, coal, gypsum, bauxite, clay etc. are the raw material for cement industry. The raw materials and the products have

more weight, so the cement factories are located where the raw material is available in abundance. There is a fairly good development of this Industry in Gujarat.

Transport Equipment Industry

You might have seen many types of vehicles for travel. Earlier, there were animal driven vehicles which were very slow. Today in modern age, vehicles with faster speed along with the development of roads have come in usage. The industry which produces such vehicles is known as transport industry.

Railway

Railway services deserve appreciation of travelling in India. Railways manufacture the equipment of its own requirement by itself, such as railway engines, passenger coaches, goods coaches etc. These are also produced privately. There are three types of railway engines : steam, diesel, electric. The steam engines are now used only for the Heritage Trains which are run only for tourism purposes. Diesel and electric engines are produced at Mihijam in Chittaranjan Locomotives Works in West Bengal, Diesel Locomotives Works at Varanasi and The Tata locomotive works at Jamshedpur. Passenger coaches are manufactured at Perambur, Bengaluru, Kapurthala and Kolkata.

Road Vehicles

Before independence, we used to manufacture cars by assembling its imported parts. Now the factories manufacturing truck, bus, car, motor-cycle, scooter and cycle are established in our country. The road vehicles are manufactured mostly by private sector. India ranks fifth in the world in the production of commercial vehicles. Today, the vehicles and their spare parts manufactured in India are exported to foreign countries. Tractors and cycles are produced in very large scale and we export them overseas.

Ship Building Industry

This is an ancient industry in India. In recent times, there are centres to build ships of modern style. These are : Vishakhapatnam, Kolkata, Kochi, Mumbai and Marmagao which are in public sector. Kochi and Vishakhapatnam build ships of larger size. Private dockyards fulfill local needs.

We have also started producing helicopters. Air craft building units are established at Bengaluru, Koraput, Nasik, Hyderabad and Lucknow. The building of air crafts for passenger travels has still not started in India.

Electronic Industry

Radio set and telephone industry was established in India in 1905. This can be said to be the beginning of electronic industry in India. Bharat Electronics Limited (BEL) was established in 1956 in Bengaluru with the motive to manufacture equipment for Akashwani and weather department. Today it produces various electronic equipment in collaboration with Indian Space Research Organization (ISRO).

This industry has brought a lot of changes in the normal life of the people, their life style and the national economy. Bengaluru has become capital of this industry. It is also called “Silicon valley of India”. Software park, science park and technological park are established for the development of this industry. The future of this industry in India is very optimistic.

Industrial Pollution and Environmental Degradation

Industrial production has a noteworthy contribution in the economic development of the nation. Industries have increased pollution and the environment has degraded. When the environmental conditions deteriorate due to natural or man induced reasons, the quality of environment is reduced which is called environmental degradation. Mainly four types of pollutions are created due to industries : air pollution, water pollution, land pollution and noise pollution.

Industries have polluted air and water to a great extent in the present age of competition. The air has become polluted due to very harmful gases like carbon monoxide and sulphur dioxide. Water pollution has increased due to industrial effluents. Today, many factories, release their industrial waste in the rivers ignoring the laws. Water today is heavily polluted than before.

Noise pollution is one of the reasons for deafness in human life. Due to old machinery in industries and means of transportation, the noise pollution has increased. Man experiences mental tension due to too much of noise.

Remedies to Curb Environmental Degradation

The country should make progress, but the progress should be made in such a way that the environment is not degraded. The amount of pollution can be reduced with proper planning for industrial development. Pollution can be reduced also by selection of the quality equipment and fuel. The air pollution can be curbed through filter, scrubber, precipitators etc. The water pollution can be prevented by releasing industrial effluents after proper treatment. Industrial water can be purified after due treatment.

Exercise

1. Answer the following questions in details :

- (1) Where are the sugarcane factories located? Why ?
- (2) Write short note on the iron and steel industry of India.
- (3) Write short note on the importance of industries.
- (4) Write short note on the Cotton Textile Industry.

2. Write to-the-point answer of the following questions :

- (1) Mention the steps to curb environmental degradation.
- (2) Describe the classification of industries.

3. Write answer to the following questions in brief :

- (1) How many ship building centres are there in India ? Which are they ?
- (2) Which raw material is needed for manufacturing cement ?
- (3) Where are the centres of chemical industry located in Gujarat ?
- (4) State four centres of paper industry in Gujarat.

4. Select the correct option from the options given for each question and write answer :

- (1) Which of the following cities is called cottonopolis of India for cotton textiles ?
(A) Indore (B) Mumbai (C) Ahmedabad (D) Nagpur
- (2) Which place does India hold in the export of Jute in the world ?
(A) Second (B) First (C) Third (D) None
- (3) Which Indian city is well-known as “Silicon Valley” of India ?
(A) Delhi (B) Bengaluru (C) Jaipur (D) Nagpur
- (4) Where is the mini steel plant located in Gujarat ?
(A) Kandla (B) Okha (C) Dwarka (D) Hajira
- (5) Which of the following pairs is false ?
(A) Bengal-Kulti (B) Jharkhand-Jamshedpur
(C) Karnataka-Bhadravati (D) Andhra Pradesh-Burnpur

Activity

- Visit a nearby industrial place along with your teacher.
- Mark different industries on the map of India and prepare an atlas.
- Gather information about different industries by visiting different websites.



The movement of people and goods from one place to another is called transportation. In general terms, the process of going from one place to another is known as transportation. The transportation has an important contribution in economic and physical progress. Due to transportation, the exchange of goods and people is made possible. Distant places can be linked through transportation. National integration and processes like industrialization and urbanization are made possible due to transportation.

Earlier there was less interaction among people in comparison with today. Now people make use of communication equipment more and more for exchanging messages. Mails, telephones, cell (mobile) phones and internet services are being used very widely. India has launched satellites for space research. This has improved the telecommunication services very much.

Trade is the tertiary economic activity. Trade encourages production activity. No country can ever be self reliant totally. So it has to make exchanges with other countries, e.g. The agro-products of India are sent to middle-eastern countries and we import date-palms and mineral oil from them.

Transportation

Earlier man used to live a wanderer's life, but after the invention of agriculture, he started living a sedentary life. Earlier he used to carry his things himself. In due course, he started using animals as beast of burden in agriculture and animal husbandry. In modern period, auto vehicles are used more than animals in transportation.

The types of transportation are affected by factors like location, climate, relief, human population etc. Moreover, some cultural factors like technical development, economic development, market and capital investments, political decisions etc. also affect the transportation. Transportation is carried out by roads and railways in plain region. In mountainous regions, animals and man are used (Yak in the interim places in Himalayas) for transportation



14.1 Man transporting goods in mountainous region



14.2 Goods transported by elephants in forest area

of goods. During ascent to Everest, Bhotia people, who are better mountaineers also, work as labourers to carry goods. Besides, elephants, mules and horses are used in the mountainous forests. Camel is best for transportation in desert. You might have seen a woodcutter carrying wood on his head. On railway stations, the coolies are also seen carrying luggage on their head. Ship or a small boat is used as a transport vehicle near the sea coast or where the river is fairly deep and is perennial.

Roads or Land Transportation

Roads were important in transportation since ancient times. There was a road network of highways during the rules of Samrat Ashok and Chandragupta Maurya. Roads are complimentary to the railways, sea routes and air routes. Most important characteristics of roads are the widespread field of their services, safety of goods, saving of time and cheap and multi-services. The only option to connect goods, man and the area is roads. The road system of India is third largest in the world after united states of America and China.

Things to know

Roadways form about 83%, railways 9%, airways 6% and waterways form about 2% of the total national transportation system.

Classification of Indian Roadways

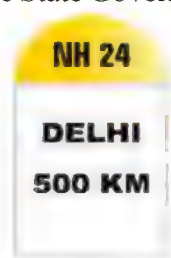
- (1) National Highway (2) State Highway
- (3) District Roads (4) Village (Approach) Roads
- (5) Border Roads

(1) National Highway : Highways are important not only from economic development point of view but also from the safety point. The responsibility of the construction of these highways rests with the Central Government. The State capitals, large industrial and commercial cities and major ports are inter-connected by these highways. These roads also connect India with neighbouring countries like Myanmar, Pakistan, Nepal, Bhutan and China. National Highway No.44 is the longest highway of the country and it connects Srinagar with Kanyakumari. Four metro cities Delhi, Mumbai, Chennai and Kolkata will be interlinked by Golden Quadrilateral Highway System.

National Highway No. 27, 41, 47, 141, 147 etc. pass through Gujarat. These numbers are changed by the Government of India in 2011.

Considering from total population of view Chandigarh, Puducherry, Delhi, Goa states have more number of national highways. Next come the states of Mizoram, Arunachal Pradesh, Meghalaya, Manipur etc. The total length of national highways is less in those states like Uttar Pradesh, West Bengal, Bihar, Madhya Pradesh, Rajasthan, Maharashtra and Gujarat where there is more population.

(2) State Highway : State highways are important for trade and industries. These roads are connected to all districts and the national highways. The responsibility of construction and maintenance of these roads lies with the State Governments.



14.4 National Highway with Milestone



14.5 State Highway with Milestone



14.6 Village Road with Milestone

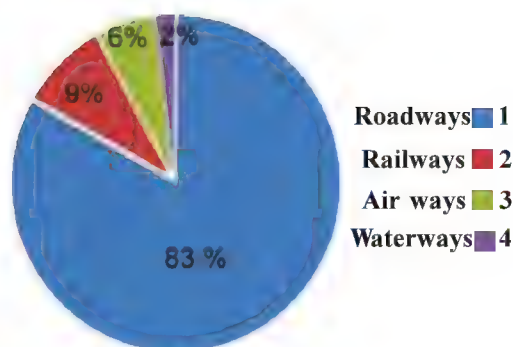


14.7 Approach Road

(3) District Roads : These roads connect villages and the main cities with the district headquarters, and the headquarters of talukas and districts. Earlier, these were all unmetalled roads, but now most of them are converted into metalled roads. These are maintained by district panchayats.

(4) Village Roads : The construction and the maintenance of these roads is done by Gram Panchayat. These roads which connect the roads passing by the villages are unmetalled and so these are not useful in rainy season. Under Pradhan Mantri Gram Sadak Yojana, attempts are made to improve the village transportation. Under the scheme, a large scale work is undertaken to convert these roads into metalled roads.

(5) Border Road : Border Road Organization was established in 1960. This Organization constructs roads in the border area for the defence of the country and for protection. It undertakes work like construction of roads in inaccessible remote area and its maintenance, to clear snow etc.



14.3 Ratio of Transportation

Expressways



14.8 Sign Board on Expressway

Expressways are also called Drut Gati Marg. Vehicles can be driven without any obstruction on these highways of four or six lanes. Overbridges are constructed along these highways wherever there is a railway crossing or a cross road. Ahmedabad-Vadodara Express Highway in Gujarat is an example of this. A toll tax has to be paid for using this highway. Roads have been constructed connecting all major ports of the nation.



14.9 Indian National Expressway

Traffic Problem

Overbridges, bypass roads and ring roads around the cities are constructed to avoid the traffic problem in larger cities. However, the traffic problems go ashtray in metropolitan cities due to the increase in vehicles. The urban roads cannot be widened compared to the increasing population and increasing number of vehicles. With increasing encroachments along the roads, traffic jam scenes have become very common during peak hours in cities. Traffic jam is also caused due to marriage processions, social processions and other processions. In cities like Delhi, the traffic jam does not get cleared for many hours. So those going for important work, passengers heading towards the railway station and patients needing immediate treatment but unable to reach hospitals are put to inconvenience.

Some suggestions to remove traffic problems

In Std. 9, you studied some suggestions about traffic problem. Now let us study in details.

- If you are a student and if you do not have a driving licence, do not drive a vehicle. You can contribute this way in solving traffic problems.
- Do not overtake unless it is absolutely necessary.
- Two wheelers like cycle, scooter etc. should be driven only on the left side of the road.
- Do not talk on cell phones(mobiles) while driving. If it is inevitable, show the sides, stop the vehicle on the left side of the road and then only talk on the cell phone.
- Allow the vehicles 108, ambulance and fire brigade to pass first.
- Do not create noise by unnecessary honking.
- Follow the traffic signals.
- Walk down to nearby places or use a cycle.
- At night, use dimmer only if it is absolutely necessary.

Railway

Indian railways is the largest national institution. Indian Railways is the main medium of transportation to co-operate in the economic fields of India such as agriculture, industries, trade, service etc. It has a major contribution in national security, peace, management, to establish cultural and geographical unity and to maintain it. India ranks first in Asia and second in world in railways.

Progress of railways : First railway in India started in 1853 between Mumbai and Thane. There are three types of railway in India. These are : Broad Gauge, Metre gauge and Narrow gauge. The metre gauge and narrow gauge railway tracks are being converted into broad gauge in recent times. This is a big achievement for Indian railways. Due to different gauges, lot of time was wasted in traveling, and transporting passenger goods. So much money was wasted.

Railway network is more dense in the States which have plain region, dense population, industrial development, intensive agriculture and have rich mineral fields. Large cities like Kolkata, Delhi, Jaipur have Metro Rails also. Work has started on the metro rail project between Ahmedabad and Gandhinagar. Mono rail has proved very important to connect Mumbai with its suburbs.

Railway is useful for the transfer of passengers and material goods. Besides it is also useful for the speedy transfer of food grains and forage during drought. From defence point of view also it is useful for transferring soldiers and weapons. Konkan Railways has provided a good example by laying down railway tracks through tunnels in the mountainous regions which were highly inaccessible. Indian Railways is considered to be excellent for time, safety and facilities and it is being modernised very fast. The route between Dibrugadh and Kanyakumari is the longest railway route in India.



14.10 Major Railway Routes of India

It is known as vivek express. In Gujarat, Ahmedabad is the biggest railway station. Other important railway junctions are Mahesana, Viramgam, Rajkot, Vadodara, Surat, Anand etc.

Waterway

Water transportation was carried out in India since ancient times. All transactions were done through waterways when roads and railways did not exist. Compared to roads and railways the waterways are cheaper, because no expense is incurred in their construction or maintenance. There are two types of waterways in India : (1) Internal Waterways (2) Oceanic Waterways.

Internal water transportation services are developed more in Assam, West Bengal and Bihar states of North-East India, while in South India also, internal waterways are used more for services.

Transportation by river-canal : West Bengal, Assam, Tamil Nadu and Bihar are important states as river waterways. Steamers and large boats use these permanent waterways. To maintain the internal water transportation, the Government has recognised the following waterways as National Waterways.

- National Waterway 1 Ganga River : Haldia-Allahabad 1620 Km
- National Waterway 2 Brahmaputra River : Dhubri-Sadiya 891 Km



14.11 Major Waterways of India

- National Waterway 3 West Coast Canal : Kollam-Kottapuram 250 Km
- National Waterway 4 Godavari - Krishna River : Kakinada - Puducherry 1078 Km
- National Waterway 5 Brahmani River : Goenkhali -Talcher 588 KM

Oceanic Waterway : India has about 7516 km long coastline. Along this coastline, there are 13 major and about 200 minor ports. After Shipping Corporation of India was founded, there has been much development of national and international waterways. Kandla, Mumbai, Navasheva, Marmagao, New Mangalore and Kochi ports are located on the western coast, while Kolkata, Haldia, Paradwip, Vishakhapatnam, Chennai, Tuticorin etc. are main ports of eastern coast.

Gujarat has got a long coastline of about 1600 km. Kandla is the largest port of Gujarat. Bhavnagar is the only port having automatic lock-gate system. Porbander is a free port for the entire year. Other important ports are Veraval, Sikka, Pipavav, Navlakhi, Mundra, Poshitra, Okha and Hajira. A project is undertaken to develop Poshitra port.

Airways

It is the speediest and costliest mode among all types of transportation. Airways are used to reach distant places, remote and dense forests and to reach those places which are not accessible easily by road. In India, the weather remains favourable for aviation almost throughout the year. In present day, airways are used more and more.

The airways services in India were as air mail services between Allahabad and Naini. It was run by a private company. Today “Air-India” and other private companies provide air transportation services.

Today Airport Authority of India carries out the management of 127 airports which include 15 international, 87 domestic, 25 civilian airport terminals. There are international airports such as Kolkata, Mumbai, Chennai, New Delhi, Bengaluru, Hyderabad, Ahmedabad etc. Pawan Hans Helicopters provides helicopter services to O.N.G.C. and to Government.

Other means of Transportation

Pipelines are used to transport liquid material such as water, mineral oil, natural gas and other liquids. An oil pipeline exists between Naharkatia of Assam to Nunmati-Barauni. One pipeline goes from Kalol To Koyali in Gujarat and from Salaya to Mathura. A pipeline has been installed from Bombay High upto Mumbai coast. In Gujarat, Natural Gas is transported through pipeline to Khamhat-Dhuvaran-Koyali-Ahmedabad. Cooking gas is provided through pipelines to Surat, Bharuch, Vadodara, Ahmedabad, Jamnagar, Morbi, Rajkot, Gandhinagar cities.

Ropeway : In mountainous regions, the summits are connected by ropeway to transport goods and passengers. There are about 100 ropeways in India. Ropeways are seen in Darjeeling, Kullu-Manali, Cherrapunji, Haridwar etc. in North India and in the mountainous regions of Chennai and Malai. The ropeway services in Gujarat are available at Pavagadh, Saputara and Ambaji. Work for a ropeway has started at Girnar in Junagadh.

Communication

The arrangement to send or to collect information from one place to another is called “Communication”. The communication system has proved extremely useful in routine life for relief and rescue works at the time of natural hazards like flood, drought, cyclone, tsunami. The communication system plays an important role in the economic, social and cultural progress and for maintaining national integration and unity.

In ancient times, messages were sent by playing the dhol (drum), by smoke, by pigeons and through other animals. In modern communication mail services, telegraph, telephone, mobile telephone, smart phone and satellites have made the communication very speedy and easy. Science and

technology have contributed very much in developing the field of communication. Today we can see all important events live. Communication can be divided into two parts : (1) Individual communication system (2) Mass communication system.

(1) Individual Communication System : Internet and smart phones are effective among individual communication system. E-mail, E-commerce, exchange of currency etc. have become very fast due to internet. Moreover, there has been a revolution in telecommunication through various applications on social media. Villagers also remain in live contact with people locally and in abroad.

(2) Mass Communication System : There are two mediums in mass communication system : (1) Print media which includes newspapers, magazines, pamphlets. (2) Electronic Media which includes Akashwani and Doordarshan. Prasarbharti is the autonomous body for transmissions in the country. Its two divisions are Akashwani and Doordarshan. There are 415 radio stations in the country today. It broadcasts programmes in 23 languages. It can be used conveniently in the most remote area also. It becomes an important unit for contacts at the time of natural disasters. With use of satellites, Doordarshan news, weather reports and programmes of entertainment and education are also telecast. Today, many private channels also have started programmes like Doordarshan.

Satellite Communications

Artificial Satellites have their own communication skills. But along with that, it also controls other mediums of communication. The Indian National Satellite (INSAT) satellites launched by India are multi-purpose systems, which is helpful to Doordarshan for the forecast of weather, cyclone and thunderstorms, warning for disasters, research and other telecasts. Besides, there has been a development of indigenous Polar Satellite Launch Vehicle (P.S.L.V.) through the Indian Remote Sensing Satellites (I.R.S.).

Trade

India is a vast country. At some places, there are mountainous regions, coastal plains and deserts. Same type of diversity is seen in climate, vegetation, mineral resources and energy resources. There are different crops in every region and also the difference in industrial output. As a result, there are two types of trade systems in the country : (1) Internal Trade and (2) International Trade.

(1) Internal Trade : The commodities available in excessive quantity of one state is transported to another state and vice versa. This is known as Internal Trade. For example, Punjab produces more wheat, so it exports it to other States. But Punjab does not have a sea coast, so it gets its salt from Gujarat. Thus every state exports its products. The internal trade has developed in India due to this.

(2) International Trade : The system in which different countries of the world export and import their requirements can be called International Trade. It is necessary to maintain trade balance in international trade, otherwise there would be a negative trade balance. If a country exports more than it imports, its trade balance is positive. This increases the reserves of foreign exchange of our country. If the imports exceed the exports, then the trade balance is negative. The currency value of that country which increases its export increases in international market and the currency value decreases in the international markets of those countries which increase their imports. After the Liberalisation Policy of 1991, there have been many changes in the international trade of India. In last few years, the trade balance of India is mostly negative. In order to make this trade balance positive, the government has started “Make in India”. Due to this, many foreign companies will produce their goods in India and will export them to foreign countries. Now we shall study the export-import trade of India.

Import Trade of India

Iron production in India is not sufficient, India imports iron and copper. The demand for mineral oil and lubricants is more for transportation and for keeping the machines

active, these are imported. We also import machines, pearls, gemstones and edible oils as per our requirements. We import these things from U.S.A., Germany, Russia, Myanmar, Iran etc.

Export Trade of India

Only a limited portion of the production is allowed to be exported, so that its price may not increase within the country. We import raw materials for few things, manufacture some goods from them and then export them. Indian export includes iron ore and minerals, engineering goods such as cycle, fans, sewing machines, cars, railway coaches, computer software etc.

We also export chemicals and the things related to them, gem stones, hide and leather goods, cotton textile, fish and its products, handicrafts, tea-coffee, jute and its products and readymade clothes.

Exercise

1. Answer the following questions in details :

- (1) Write short note on National Highway.
- (2) Mention the steps to control traffic problems.
- (3) Which are the main National Waterways of India?

2. Write to-the-point answers to the following questions :

- (1) What is included in mass communication ?
- (2) Which are the main commodities exported from India ?

3. Write answers to the following questions in brief :

- (1) Where are the ropeways located in Gujarat?
- (2) Which are the effective gadgets in individual communication?
- (3) What is Internal Trade ?
- (4) How was the communication carried out in earlier times?

4. Select the correct option from the options given for every question and write answer :

- (1) Who work as the porters during the ascent to Everest ?
(A) Nepali (B) Bhotia (C) Bhaiyajee (D) None
- (2) Which is the longest National Highway in India ?
(A) No.3 (B) No.8 (C) No.44 (D) No.15
- (3) Who is responsible for the construction of National Highways ?
(A) State Government (B) Central Government
(C) District Panchayat (D) None

Activity

- Gather online information about the railway facilities from the Mobile Application of Railways.
- Know about the route through various mile stones observed during travel.
- Know from your teacher about the export-import news appearing in newspapers.

But, demerits are also witnessed in mixed economy. For example economic instability, lack of coordination, inconsistent economic policy, low rate of growth of economic development etc. There are limitations in mixed economy.

Exercise

1. Answer the following questions in detail :

- (1) Discuss any five features of developing economy.
- (2) Wants are unlimited. Explain.
- (3) Discuss limitations of market system.
- (4) Discuss the distribution of resources in mixed economy.

2. Answer the following questions as per requirement :

- (1) Land as a factor of production.
- (2) Limitation of socialist system.
- (3) Discuss the difference between economic progress and economic development.
- (4) Write a note on primary sector.
- (5) Differentiate between : Economic and Non-economic activities.

3. Answer the following questions :

- (1) What is economic development ?
- (2) Which are the factors of productions ? Name them.
- (3) What is the meaning of economic activity?
- (4) Which economic system has been followed by India ?
- (5) What do you mean by alternative use of resources ?

4. Answer the following questions by choosing the correct alternative :

- (1) Economically, India is which type of country ?
(A) Developed (B) Backward (C) Developing (D) Poor
- (2) According to world bank report 2004, what is the minimum per capita income (in dollars) for a country to be called a developing country ?
(A) \$ 480 (B) \$ 520 (C) \$ 735 (D) \$ 250
- (3) Which system is called free economy ?
(A) Socialist System (B) Mixed Economy (C) Market System (D) None of these
- (4) Cattle rearing is included in which sector of economy ?
(A) Secondary (B) Primary (C) Service Sector (D) Three of them

Activity

- Teacher should enable the student to prepare activities related to the topic economic and non-economic activities under her/his guidance.
- Collect information about national income of our country in different years and prepare a chart.
- Classify the production equipment by the students and prepare the sketchbook.

Every person's morning begins in a different way. Many people lead their life full of material pleasure. But maximum people of the world are seen struggling for existence. For these people, who are called poor, physical pleasure, well being or resting is an imagination only. How has this situation originated? How to come out of this situation? Such type of questions have their answers :

Economic development

In today's modern world every country is trying to achieve development. But development is not confined to economic development only. It is a process of social change having many faces.

Economic development shows constant increase in National income of a country.

Economic development means :

- constant increase in national income of a country
- increase in per capita income of a country
- change in life style of the people/change in living standard of the people

This is called economic development. Total income of the country is called "National income". By dividing the total income of the country with total population of the country, we obtain 'per capita income', while living standard includes the facilities like obtaining food, clothes, education, health services, transportation services as well as shelter. Because of increase in national income and per-capita income in India, after independence, there has been improvement in services and facilities such as availability of food grains, cloth, electricity, education, health services, shelter etc. The above mentioned requirements are fulfilled easily and in a better way as compared to the past. So, we may say that economic development is taking place in India.

National Income of India

National Income (GDP) of India which was ₹ 87,36,039 crores in 2011-12 has increased to ₹ 1,35,67,192 crores in 2015-16.

Difference between economic progress and economic development

In ordinary sense economic progress as well as economic development, both the words show an increase. But there is lot of difference between both of them. They are as follows :

- (1) **On the basis of development process :** Economic development is qualitative while economic progress is quantitative. Economic development is first stage, while economic progress is the stage after economic development.
- (2) **According to changes taking place in economy:** On the basis of new researches in economy increase in production is economic development. Because of research in hybrid seeds, in agriculture sector, there has been many fold increase in agriculture production. This shows economic development. On the other side, when there is increase in agriculture production because of increase in agricultural land, it is called economic progress.

- (3) In relation to developed and developing nations :** Difference is seen in both of them in relation to developed and developing nations also. Increase in national income of developed countries is called economic progress, while increase in national income of developing countries is called economic development.

Features of Developing economy :

Economy of developed and developing countries is separated on the basis of per capita income. As per world development report of 2004 of world bank, countries having less than \$ 735 per capita income are categorized as developing economy. Following are the features of developing economy :

(1) Less per capita Income : National income of developing countries is less, while population growth rate is high. So, per capita income remains low. Because of less per capita income, living standard of people is low.

(2) Population growth : Population growth rate is high in developing nations. Rate of population growth is 2 % or more in these nations.

(3) Dependence on agriculture : Main occupation of the people of developing countries is agriculture. More than 60% of the population is dependent on agriculture for employment. Contribution of agriculture in national income of these nations is about 26 %.

(4) Unequal distribution of income : Unequal distribution of income and factors of production is seen in developing countries. This inequality is seen in cities as well as villages. 20 % rich people of the country share 40 % of national income and the poorest 20 % people share 10 % of the national income. This concentration of income and property is seen in the hand of rich people in developing economy.

(5) Unemployment : Unemployment may be counted as an important feature of developing countries. In these countries ratio of unemployment is more than 3% of total labour. In these countries different types of unemployment may be seen. e.g. seasonal unemployment disguised unemployment, industrial unemployment etc. Moreover, the period of unemployment is very long.

(6) Poverty : Poverty is also a feature of developing economy. People who are not able to satisfy their primary necessities like food, clothing, shelter, education and health are called poor. In developing countries such people constitute one third of the total population.

(7) Dual economy : The economy of a developing country is based on dual or mixed system. On one side backward farming, old machinery, orthodox social structure, less production are seen in villages. On the other side, there are the cities having modern industries, new production, process, modern implements and modern sophisticated lifestyle.

(8) Insufficient infrastructure facilities : Crucially vital infra-structural facilities like education, transportation, communication, electricity, health facilities, banking etc. are less lacking in developing countries, which hinders the development of a nation.

(9) Form of International Trade : The structure of foreign trade of developing countries is different. These countries mainly export agro-products and farm-products as well as mineral ores. These type of products have less demand and low rate. So, less income is gained by exporting these goods.

While imports include industrial products and machinery. As the cost of these products is more; so expense on imports rises. Thus, as the conditions of foreign trade are adverse, there is an increase in foreign debt. Thus, we see above mentioned features in developing countries. As Indian economy is developing, all these features, are related to India in greater or lesser measure.

ECONOMIC AND NON-ECONOMIC ACTIVITIES

Before studying about Indian economy, let us know what economic and non-economic activities.

Economic Activities

Economic Activity means earning or spending money for the exchange of commodities or services. For example activities of a farmer, an artisan, a businessman, a teacher etc. are included in economic activity.

Non-economic Activities

Activities that are not aimed at obtaining income or reciprocate something indirectly are called non-economic activities. For example, nurturing of a child by the mother, activities of social services done by a social worker etc. can be identified as non-economic activities.

Structure of Indian Economy

Various occupations and economic activities are classified in three sections : (1) Primary sector (2) Secondary sector (3) Service sector. This classification of economic activities are recognized as commercial structure. All the three sections and activities included in them may be discussed as follows :

(1) Primary sector : Agriculture and agriculture related activities such as cattle rearing, cattle breeding, fishing, poultry farm, collection of forest products, mining of raw metal etc. are included in primary sector section.

(2) Secondary sector : Small and large scale industries, factories, construction, electricity, gas and water supply are included in this section. This section is also acknowledged as industry, which includes production from small pin to gigantic machines.

(3) Service sector : Different types of services are included in this section. Services like trade, communication, airways, waterways, education, health, banking and insurance, tourism and entertainment are included in this sector.

Normally the primary sector dominates in developing countries. Primary sector contributes the most in employment generation and national income. However, as there is rise in economic development significance of primary sector decreases in comparison to secondary and service sector and importance of industrial sector and service sector increases.

Factors of production :

Production is done with the help of natural resources and labour. Different types of tools are used for production. These factors are divided into four parts : (1) Land (2) Capital (3) Labour (4) Entrepreneurship.

(1) Land : In normal sense land is the upper layer of surface of the earth. But in terms of economics land means different types of natural resources, which includes forests, rivers, mountains, minerals present in the interior of the earth, metals etc. present on the earth surface. Thus, land is natural tool for production.

(2) Capital : Man-made instruments helpful in production process such as instruments, tools, houses etc. are included in capital, property, assets and investment etc.

(3) Labour : Labour means mental or physical work done with the aim to obtain monetary gain. Labour is a living factor of production. Work of farm labours, workers, teachers, doctors, artisans etc. is called labour.

(4) Entrepreneurship : The person who efficiently combines the three factors of production-land, capital and labour is called entrepreneur. The process of co-ordinating the three factors of production in profit making process is called entrepreneurship.

Distribution of factors of production

Human wants are unlimited while resources to fulfill them are limited. No nation of the world has resources in unlimited quantity. There will always be scarcity of factors of production. As a result, every country faces problems related to allocation of resources. Many questions arise such as why, when and how much quantity of limited resources can be used.

(1) Unlimited Wants : Human wants are uncountable and unlimited. So many wants originate from one want. Many requirements are to be fulfilled again and again while many wants arise because of development of science and technology. Thus, because of many reasons wants become unlimited. So, in order to fulfill the wants, one has to make selection among wants.

(2) Important order in terms of necessities : As the resources to satisfy wants are limited, the individuals has to decide which want is more important. He has to satisfy his requirements in the order of priority. Whichever requirement is more important that has to be satisfied early and later on the others.

(3) Limited Resources : Factors of production mainly include natural wealth and man-made wealth. All these tools are limited. So they have to be utilized judiciously. Distribution of tools has to be done keeping selected wants in the centre.

(4) Alternative use of the Resource : Resources to satisfy demands are limited. Not only this, they have alternative usage also. When any tool of production may be utilized in more than one way, it means that the tool has multiple usage. So, it may be said that this usage is alternative. For example, if wheat is sown in a land bajra, maize, groundnut or any other yield can not be cultivated. Other usage of the land has to be stopped.

Thus, in above mentioned condition, distribution of factors of production is done in such a way that they satisfy to maximum possible demands.

Methods of Alloting (Allocation) of Resources :

Every nation tries to attain speedy economic development by making the best possible allocation of resources. Allotment of resources is mainly done by two methods : (a) Market Mechanism : (b) Social System. Both the systems are opposite to each other. By mingling both systems many other methods have developed. Every country accepts one or the other method as per their requirement. Following is the explanation of methods of allotment of resources.

(A) Market system : Nations like America, Japan etc. have made their economic development through market system. Market system is also called capitalist system. In this method, the process of resource allocation is done on the basis of profit scope. In this system, in production and its related activities profit is at the centre. People invest in those industries where they find more scope of profit. Market is completely free in this system.

Government does not have any specific economic policy or does not play any role in this method.

Competition plays a vital role in market system. In the competitive market, the owner has to increase working capacity to the greatest extent in order to obtain maximum profit. Because of this method, many new researches are done and new methods of production are created. So production is the maximum. Because of this fast economic development of the countries takes place.

Thus, competition controls the whole market like an 'invisible hand'. As the State does not interfere, this system is also known as "Free economy".

Features of Market Mechanism System :

- (1) Ownership of resources of production is either individual or private.
- (2) Profit is at the centre of economic activities in market system.
- (3) Consumers get good opportunity of choice.
- (4) Government interference is not there in this system.
- (5) Distribution of resources is based on profit.
- (6) Economic decisions are taken while keeping price mechanism in mind.

Benefits of Market Mechanism System :

- (1) Economic freedom of individual is protected in market system.
- (2) Resources of production are utilized to the greatest extent and efficiently.
- (3) Abundant production may be done.
- (4) New explorations keep on taking place continuously in economy. As a result, economic development becomes faster.
- (5) Quality of things improve because of competition.

Limitations of market mechanism system : Inspite of having many benefits, market system is not perfect. There are many disadvantages and limitations of it. which are as follows :

- (1) Because of keeping profit in the centre of production, commodities are produced in more quantity and production of luxurious commodities of basic requirement is neglected or reduced.
- (2) Because of lack of policy related to role of state, natural resources are wasted.
- (3) Due to lack of knowledge and ignorance about the market, consumers are exploited.
- (4) Due to centralization of property and income there is increase in disparity of income.
- (5) There is a fear of monopoly, economic instability, exploitation of labour etc.

(B) Socialist system : Socialist system originated because of limitations and failures of market system. Countries like Russia and China have achieved fast economic progress by adopting this system.

Socialist system is quite opposite to the market system. In the socialist system all economic decisions are taken by the state machinery. State owns all the resources of production. In this system whole economy is managed by the State. All the decisions pertaining to production, investment, resource distribution, production distribution etc. are taken after keeping the requirement of the society in mind.

In the socialist system rather than profit social welfare is at the centre. Production of resources and their prices are decided by the State. The responsibility to achieve the target of production, decided by the State governed factories. Farming is also, owned by the state. Labour are paid according to their ability and accordingly work is taken from them.

Features of Socialist System :

- (1) Resources are owned by the State.
- (2) All the economic decisions are taken by the state.
- (3) Rather than profit, social welfare is at the centre of economic activities.
- (4) Labourers are paid wages in return of work.

Benefits of Socialist System :

- (1) Because of production according to the requirement of the society, unimportant and luxurious items are not produced.
- (2) As the decisions related to production are taken by the state, so wastage of resources is not there.
- (3) Disparity of income and property is removed.
- (4) Consumers are not exploited.

Limitations of Socialist System : Socialist system which has come into existence with the noble intention of equal distribution and social welfare, too has certain limitations.

- (1) As the resources of production are owned by the State, people do not get encouragement and motivation to increase production.
- (2) Due to lack of competition, contest and research do not get momentum in the economy.
- (3) There is lack of individual freedom in this system.
- (4) Because of complete interference of state, there is fear of bureaucracy.

Mixed Economy : Mixed economic system attempts at removing the limitations of market system and socialist system and tries to assimilate in it good elements of both the systems.

Mixed economy is such a type of economic system in which public and private sector co-exist and both the sectors do not work as a competitor rather they work as complementary to each other. There is individual or private ownership in agriculture, trade, small consumer goods industry etc. While basic key areas like heavy industries, factories, producing defence material, railway, electricity, roads, irrigation etc. are owned by the State.

In this system market is not completely free. Government lays control in different ways. For example state lays heavy tax on production of unwanted things. In the same way industries in the backward areas are encouraged by giving subsidy, relaxation in tax etc.

Thus mixed economy is such an economic system in which important place is given to economic planning in taking economic decisions. Co-existence of private and public sector is accepted in system. This system is also called “Controlled Economic System” because of the restrictions and control. Countries like India, France and England follow mixed economy.

We, so far studied about, market system, socialist system and mixed economy as deciding factors for economic decisions and distribution of resources. There is no country in the world today, where there is absolute market system or socialist system. Both the systems have lost their individual features and have assimilated into mixed economy. Market system witnesses indulgence of planning elements and state interference, while socialist system witnesses economic relaxation and economic liberalization.

But, demerits are also witnessed in mixed economy. For example economic instability, lack of coordination, inconsistent economic policy, low rate of growth of economic development etc. There are limitations in mixed economy.

Exercise

1. Answer the following questions in detail :

- (1) Discuss any five features of developing economy.
- (2) Wants are unlimited. Explain.
- (3) Discuss limitations of market system.
- (4) Discuss the distribution of resources in mixed economy.

2. Answer the following questions as per requirement :

- (1) Land as a factor of production.
- (2) Limitation of socialist system.
- (3) Discuss the difference between economic progress and economic development.
- (4) Write a note on primary sector.
- (5) Differentiate between : Economic and Non-economic activities.

3. Answer the following questions :

- (1) What is economic development ?
- (2) Which are the factors of productions ? Name them.
- (3) What is the meaning of economic activity?
- (4) Which economic system has been followed by India ?
- (5) What do you mean by alternative use of resources ?

4. Answer the following questions by choosing the correct alternative :

- (1) Economically, India is which type of country ?
(A) Developed (B) Backward (C) Developing (D) Poor
- (2) According to world bank report 2004, what is the minimum per capita income (in dollars) for a country to be called a developing country ?
(A) \$ 480 (B) \$ 520 (C) \$ 735 (D) \$ 250
- (3) Which system is called free economy ?
(A) Socialist System (B) Mixed Economy (C) Market System (D) None of these
- (4) Cattle rearing is included in which sector of economy ?
(A) Secondary (B) Primary (C) Service Sector (D) Three of them

Activity

- Teacher should enable the student to prepare activities related to the topic economic and non-economic activities under her/his guidance.
- Collect information about national income of our country in different years and prepare a chart.
- Classify the production equipment by the students and prepare the sketchbook.

When India became independent in 1947, our government accepted the path of planning to achieve speedy economic development. It took over the charge of achieving speedy economic development by implementing five year plans, one after the other. Monetary policy, fiscal policy and industrial policy have been announced for this. Although many of these plans were completed, success was not attained in achieving economic development in true sense. Hereby, government investigated the causes for failures and determined to give new form to different economic policies in order to rectify the errors done in the past.

In that regard, in industrial policy of 1991, such economic reforms were implemented which could strengthen economic development, which are known as (1) Liberalization (2) Privatization and (3) Globalization.

(1) Economic Liberalization : Government gradually reduces the restrictions and controls imposed on private sector and encourages economic development. This is known as economic liberalization. Main economic reforms related to liberalization which were made in the earlier period were as follows :

- (1) There was reservation for 18 industries. For the industries other than them, compulsion to take government permission was eliminated.
- (2) Areas other than railways, atomic energy and defence were opened for private sector.
- (3) Tradition of compulsory registration for industries was cancelled.
- (4) Provision to take government permission for setting up industries which do not cause pollution and are not hazardous for environment was cancelled.

Advantages of Liberalization :

- (1) As a result of liberalization, private sector has got an opportunity to make unconstrained development which led to increase in production.
- (2) Because of accepting policy of liberalization, global trade started getting an impetus and there has been increase in global trade.
- (3) Because of the increase in foreign trade there has been increase in reserve of foreign exchange.
- (4) Internal infrastructural facilities increased due to liberalization.

Disadvantages of Liberalization :

- (1) In spite of decrease in restrictions, monopoly could not be checked.
- (2) As focus has only been paid on industrial sector, India has remained backward in development in agriculture field.
- (3) There has been increase in disparity of income.
- (4) Because of increase in imports and decrease in exports, foreign debt has increased.

(2) Privatization : Privatization means the process in which ownership and management of industrial units, under state control is handed over or transferred to the private sector is called Privatization.

Methods :

- (1) Firstly, those areas which are reserved for public sector, are opened for the private sector.
- (2) State keeps the ownership of state owned companies under its control and gives the charge of management to the private companies or state keeps management in its own hand and gives ownership to the private company.

Advantages of Privatization :

- (1) There is increase in number of production units in industrial sector.
- (2) Production has been increased in capital intensive and consumable commodities due to privatization.
- (3) Working capacity of public sector has improved due to privatization of public sector enterprise.

Disadvantages of Privatization :

- (1) Economic power has centralized as a result of privatization. Because of which evil of monopoly has increased.
- (2) Cottage industries have not developed properly due to privatization. Only large industries have been benefitted.
- (3) Prices have not remained under control due to privatization this has led to problem of price rise.

(3) Globalization : Globalization is the process of connecting one country economy with the world economy. As a result of which flow of goods, services, technology and labour is easily available in the world.

Following improvements have taken place due to globalization :

- (1) Obstacles of trade between two nations have been removed.
- (2) Such a condition has been created so that capital exchange can easily take place between two nations.
- (3) Obstacles in the way of exchange of technology have been removed.
- (4) Free exchange of labour may be there among different nations of the world.

Effects of Globalization : Mixed effects of globalization have been there on Indian economy. Many advantages and disadvantages are there which are as follows :

Advantages :

- (1) Foreign Direct Investment (FDI) is encouraged due to globalization.
- (2) Goods produced in the developed countries can easily be obtained due to Globalization.
- (3) Developing countries like India can withstand competition at international level due to Globalization.

Disadvantages :

- (1) Expected success has not been attained in finding solution to the problems of poverty and unemployment due to globalization.
- (2) Developing countries have not acquired proper benefits of increase in exports, which they should have acquired.
- (3) Large scale industries have acquired more benefit while small scale industries have obtained less benefit.

World Trade Organisation (WTO)

World Trade Organization was established on 1st January, 1995 by the member Nations of United Nations. Its headquarter is located in Geneva in Switzerland. Its objective are as follows :

Objectives :

- (1) To remove obstacles influencing global trading.
- (2) To remove protection policy given to industries of country for foreign trade.
- (3) To co-ordinate with global trade policy and economic policy.
- (4) To solve the trade related disputes arising in the world.

Functions :

- (1) To set up a required structure for implementation of agreement related to multinational trade and agreement related to it.
- (2) World trade organization plays a vital role for debate and negotiations for multinational trade.
- (3) WTO encourages unbiased international trade.
- (4) Different nations follow their own national policy. It observes them and suggests required improvements.

Impacts on Indian Economy

India is a member of this WTO organization since its inception. So what will be the impact of this organization on India or which type of benefits would it India acquire are discussed below :

- (1) India's contribution to world trade was 5 % . Our exports have increased tremendously due to increase in international trade and as a result of it India's contribution in world trade has increased to 1%.
- (2) Being member of WTO, export of readymade clothes of our country has increased.
- (3) As a member of WTO, India has been able to increase export of its agro products.
- (4) Due to increase in export, pressure on imports has reduced and foreign investment has been increased in foreign exchange.

Thus, as a member of World Trade Organization India will not only get above mentioned but benefits also has to comply with some conditions. It is especially dependent on, how fast India increases its infrastructural facilities and how developed countries treat India.

Sustainable Development

According to the definition of sustainable development "Sustainable development is the development which meets the needs of present generation without compromising with the ability of future generations to meet their own needs." Thus, the idea of sustainable development developed because of extreme effects on nature near human habitation and man-created cover i.e. environment. The way and the speed with which present generation is developing, it cannot be maintained the future. There is a fear that luxuries which present generation is enjoying may not be there for future generation.

There is a tremendous decrease in natural resources due to economic development and their quality is also deteriorating. In this condition there is a need to change the idea of development. Idea of sustainable development is studied because of present development and effects of it on environment.

Following strategy should be adopted for conservation and preservation of natural resources :

(1) The renewable natural resources like cultivable farm, forests, water resources etc. should be used in such a way that their quality is maintained and non-renewable natural resources like coal, petroleum, minerals etc. should be used judiciously.

(2) Industrial location should be decided on this basis of lesser transportation cost. A sincere attempt should be made to achieve “Eco-friendly development”.

(3) Those resources which can be used in more than one way should be utilized in different ways such as different irrigation systems are utilized for more than one purpose. e.g. producing electricity, flood control, transportation etc.

(4) Natural resources should not be wasted. Control should be laid on unplanned disposal of industrial waste, poisonous chemicals, increasing slums etc.

(5) Stress should be laid on use of non-conventional energy resources such as solar and wind energy.

Steps taken to protect environment

For the first time “Earth Conference” was organized in 1972 at Stockholm in Sweden. There after from time to time convention and camps have been organized for protection of environment at the global level. in which it was decided to take different steps for environmental protection.

India is also involved in these global efforts. Government is also making different efforts at the national level e.g.

(1) Information about pollution condition of different cities of nations is presented.

(2) Central and state pollution control boards have been established to control pollution.

(3) 5 June has been declared as “Environment day” in the world.

(4) In India government passed “Air Pollution Control Act” in 1981.

(5) International agreements have been signed for deteriorating level of ozone, disposal of nuclear waste and maintainance of bio-diversity.

Thus, conservation of environment is everyone’s responsibility. If we do not control pollution, no doubt the life on the earth will be doomed soon.

Exercise

1. Answer the following questions in detail :

(1) What is the meaning of liberalization? Mention its benefits.

(2) Mention the benefits and limitations of privatization.

(3) Which steps have been taken to conserve environment ?

(4) Explain the strategy of sustainable development.

2. Answer the following questions pointwise :

- (1) Explain the benefits of globalization.
- (2) Mention the objectives of World Trade Organization.
- (3) Mention the ways (methods) of privatization.

3. Answer the following questions in short :

- (1) Explain the concept of globalization.
- (2) When did economic reforms start in India ?
- (3) When was the World Trade Organization established?
- (4) Explain the concept of sustainable development.

4. Answer the following questions by choosing the correct alternative :

- (1) Where is headquarter of the World Trade Organization ?
(A) Stockholm (B) Geneva (C) London (D) Kolkata
- (2) When was “Earth conference” organized to bring awareness about environment ?
(A) 1972 (B) 1951 (C) 1992 (D) 2014
- (3) When is “World Environment Day” being celebrated ?
(A) 8 March (B) 11 June (C) 5 June (D) 12 March
- (4) The process of connecting the economy of the country with the world economy is
(A) Privatization (B) Globalization (C) Liberalization (D) None of these

Activity

- Student should discuss the benefits and limitations of privatization, liberalization and globalization in group.
- Arrange a rally to bring awareness about environment.
- Encourage students to grow trees and nurture them.
- Arrange a lecture by an expert in the school on the ‘Globalization’.



Economic Problems and Challenges : Poverty and Unemployment

Indian economy experiences many serious and complex economic and social problems such as population growth, price rise, black money, poverty, unemployment, starvation, corruption, terrorism etc. among which economic problems like poverty, unemployment, price rise, population increase are major problems. Out of these we shall study about poverty and unemployment.

Poverty

A large number of people are deprived of satisfying their basic and essential requirements of the life such as food, clothes, shelter, education and health services. Such a situation is known as 'comprehensive poverty' and people living in such a condition in the society are called 'poor'.

People Living Below Poverty Line (BPL) : Poverty is a qualitative concept. In India poverty is viewed as lowest level of life. Common features of people living below poverty line are as follows :

- Person who is not able to get two meals a day.
- People suffer from problem of unavailability of dwelling place.
- They are forced to live in shabby or slum areas :
- Their income is less than determined expected income.
- Their life span is less than National Average life expectancy.
- Generally they are illiterate.
- Very often they suffer from various diseases due to lack of nutritious food.
- Children who have taken up the responsibility of looking after the family at the age, when they are supposed to study.
- Death rate is high due to malnutrition.



17.1 People Living Below Poverty Line (BPL)

Efforts made by the government to improve living standard of people, 'Living Below Poverty Line'.

- Income of people living below poverty line is very less in cities as well as in villages. Such families are called 'Antyodaya family' or families living below poverty line (BPL).
- After finding out such families, government has started public distribution system on the basis of the ration card. These shops are called Fair Price Shops. Every month they fulfill the requirements like rice, wheat, sugar, oil, salt and kerosene etc. of such families.
- It has tried to raise their living standard.

Concept of poverty was first propounded by director of WHO. for calculating poverty line certain factors are considered which includes expenditure on food, clothing, accommodation, education, health, clean drinking water, electricity, sanitation facilities, transportation facilities and income as well as the intake of calories. On the basis of these factors a particular standard of living is fixed which is known as poverty line. The concept of poverty line changes according to time, location and circumstances.

Measurement of Poverty : There are two ways of knowing the number of people living below poverty line : (1) On the basis of expenditure behind various commodities or services by a family. (2) On the basis of total income of the family (Family means minimum 5 members).

(A) Absolute Poverty :

Those people of the society who are not able to purchase the basic necessities of life like food grains, pulses, milk, vegetables at lowest market rate are said to be absolute poor.

(B) Relative poverty :

A society has different income groups, among them, some groups have low income in comparison to other, such a group is considered to be relative poor. This concept is more prevalent in developed countries.

A. ₹ 10,000 B. ₹ 20,000 C. ₹ 30,000 here income of three persons is different. As the income of “A” is less in relation to “B”, Person “A” is considered to be poor. In the same way income of “A” and “B” is less in relation to “C”. So, they are considered as poor.

Poverty in India :

In order to decide poverty line, in 2011-12, planning commission of India declared per capita expenditure for rural area as ₹ 816 which means ₹ 4080 per family expenditure and for urban area per capita expenditure was fixed at the rate of ₹ 1000 per person atleast, accordingly family expenditure was declared to be atleast ₹ 5000. This means atleast this much per capita income should be there to reach out expenditure. On the basis of new criteria number of the poor has reduced to 27 crore in 2011-12 and rate of poverty has reduced to 21.9 percent in the ratio of total population. In 2009-10 ratio of poverty in relation to population of India was 29.8 percent. Thus, approximately 35.47 crore people were living in poverty. In order to see that equality prevails at the international level. World Bank has decided per capita income as 1.90 US \$ (dollar) in 2012 as per the rate of 2008, which is considered as the scale for poverty line. According to one report of World Bank India's total population was approximately 121 crore in 2010, out of which 32.7% people were living in below poverty line. Which makes about 45.6 crore.

As per the report of UNDP-2015, ratio of poverty in India in 2011-12 was 21.92%. It means that out of total poor i.e. 26.93 crores 21.65 crore people in the rural area (25.7%) and only 5.28 crore people in urban area are under poverty line. Chhatisgarh (36.93%) is the poorest state of India. While Goa (5.09%) has lowest poverty rate. In Gujarat the proportion of poverty is 16.63%. Chattisgarh, Assam, Uttarpradesh, Manipur, Bihar, Arunachal Pradesh, Jharkhand, Orissa etc. have more than 30% proportion of poverty in India.

India is bestowed with natural resources in large quantity and is prosperous in natural raw material. But because of lack of ability to make worthy profit from them, lack of education, training and skill, defective planning, since years, these natural resources have not been utilized to their best possible extent for welfare of people. As a result of it proportion of poverty has not reduced. So, it is said ‘The poor live in wealthy India’.

(A) Rural poor : Generally, landless labours, farm labourers , artisans of cottage industries or small scale industries, marginal farmers, beggars, forced labourers, inhabitants of forests or mountainous region, tribals, temporary craftsman etc. are called rural poor.

(B) Urban poor : Temporary labours, labours on daily wages, domestic workers, rikshawalas, workers in tea stalls or hotels, or dhabas, workers working in garages, beggars or who are not able to satisfy their minimum and basic necessities and live in poverty are considered to be urban poor.

Reasons of poverty

The origin of poverty is more deep rooted in (villages) rural areas as compared to urban areas. Following are the reasons for it :

- Decrease in income from agriculture sector because of insufficient development in the field of agriculture and insufficient irrigation facilities.
- Lack of alternative employment apart from farming.
- Lack of knowledge regarding other employment, education, skill or training in the rural area.
- Increase in debt as a result of excessive expenditure because of caste system and orthodoxy, traditions and customs. Thus, it may be said that it is due to increase in unproductive expenditure.
- Due to illiteracy the poor become victim of exploitation and injustice. Along with that they are not able to get proper benefit of government schemes because of lack of information.
- Due to ignoring necessities and economic welfare of the poorest section of the society during formation of economic policies.
- Production of cash-crops was encouraged while production of edible crops was reduced. This triggered the scarcity of foodgrains and pulses and price rise because of which people could not get meals twice a day.
- Because of execution of economic reforms, rural economy collapsed, cottage and small scale industries broke down, migration increased, income in agriculture sector decreased.
- Poor people are becoming victims of malnutrition and diseases. Expenditure on health increased; although income was static but expenditure on medicines increased.
- Due to change in technology, traditional business, cottage industries etc. were deteriorated and unemployment had increased.
- There was an increase in population growth, death-rate decreased, average life-span increased, supply of labour increased in comparison to demand of labour, so unemployment increased. On the other side the production of things of basic requirement decreased, there was price rise there was. Downfall in purchase power was experienced, living standard deteriorated. Thus, poverty increased.

Strategy for poverty Eradication

The vicious cycle of poverty is increasing its grip. Reasons for it have been understood in short. On the basis of it, it has become easy to understand which type of strategy is to be adopted to remove poverty.

Till now 11th year plan has been completed. Till then neglect of rural areas in strategy for development of Indian economy and work plan is found mainly responsible for poverty. Golden pinnacle of Indian economy may be there in urban areas but the base lies in rural areas only. Villages are the heart of Indian economy, so in order to keep them alive and prosperous, a large part of budget should have been spent after them. Actual economic development, social development and cultural development of India is possible by developing villages only. Thus, through the programme 'Gramoday se bharat uday' present government has implemented the basic idea that the upliftment of the country is possible only through the upliftment of villages. Central and state Government have emphasized on implementation of new plans and programmes for removal of poverty. For this stress has been laid on improvement of basic needs life, development of agriculture sector and cottage, small scale industries etc. If opportunities for employment will be created, a flow of income will increase and poverty will be decreased.

(1) After Independence, government has given a thrust to development of large scale, heavy and key industries along with slogan "Gareebi Hatao" (Remove poverty). For their development, encouragement has been given to the development of cities. On the other hand with the objective of, Green revolution, land reform acts have been implemented, so that development may be there in agriculture

sector, as a result of which production will increase, employment opportunities will be created, employment will be increase and poverty level could be reduced. It was believed that as a result a development of industries, benefits achieved by owners of industries will increase. Income of rich farmers or landlords, which will be distributed among poor people and thus, it will decrease in. But this strategy proved to be optimistic bubbler. Speed of economic development of the country remained slow. Along with slow economic development, distribution of income was inequitable and unequal. As a result of it income and wealth was concentrated in the hands of few rich people only. Thus, no improvement was there in the condition of poor people. As a result of improper distribution of the income rich become richer and the poor remained where they were.

(2) In order to remove the disparity of income, government framed such type of taxation policy so that the poor may get commodities essential for their life and production of such commodities increases. For this purpose, heavy tax was levied on the luxurious goods used by rich people, articles and services of luxury or enjoyment. For this, strategy was made to provide essential commodities to the poor people from "Fair Price Shops"(FPS) under public distribution systems (PDS). By doing so it has tried to improve the living standard of the poor. Thus, government has tried that there should be decrease in the production of luxurious items, utilized by rich and available resources should be utilized to produce the commodities used by poor people. Therefore, government has undertaken such efforts, as a result there will be increase in employment among the poor, ability to work would increase production and finally income would increase, leading to better life style.

(3) Understanding the need to improve agriculture sector, government implemented many programmes like land ceiling act, regulation of tenancy act, security of cultivating rights etc. so that there is decrease in the income of rich farmers and landlords and increase in income of farm labours or tenants. So that there may be improvement in the condition of the poor.

(4) Government has announced the policies to encourage agriculture, agriculture related industries such like cattle rearing, dairy industry, pisciculture and afforestation. It helps in order to develop small irrigation schemes, household industries, cottage industries, small scale industries etc. In order to make people self-reliant, government has stressed on labour intensive industries. so that employment increases. At the same time it also announced policies and helped many traditional industries, handloom and cottage industries. Arrangements have been made for many household industries so that there is increase in employment in rural areas. It has made arrangements to see that the youth of rural area get opportunities of alternative employment. For this purpose objective based education, training and skill development programmes have been started. Government has implemented programmes of self-employment as a part of strategy to improve their condition. For this purpose new fields of employment have been opened so that their income increases.

(5) Government has improved the structure of education, health, residence, employment, family Planning, communication etc. It has improved irrigation facilities, roads, crop protection, skills and training field, agriculture, developed, varieties of crops; bank loans for obtaining seeds, fertilizer, tractor etc. Such type of variety of steps have been undertaken for rural upliftment. Employment fields have been created in the home itself. So that youth does not migrate towards the cities which causes the burden of population in cities. It has started schools at the village and Secondary and higher secondary schools have been opened at a close distance. By starting colleges at a close distance facility has been created to provide technical and vocational courses and training centers. In order to take care those students complete their higher studies, they are encouraged by giving them motivation in the form of economic help like scholarship, facility of fee, reduction of residential schools promoting

girls education. Many programmes for women empowerment have been started to make women self-reliant economically. Various solid steps have been taken to create self-employment. Thus, government is taking valid steps to combat the demon of poverty strategically. India will have to take firm steps to fulfill the dream of eradicating deep rooted problems of poverty and to complete the mission of World Bank regarding eradication of poverty from the world by 2030.

Poverty Alleviation Programme (PAP)

In order to make poverty alleviation solutions successful, the rural and urban people living below poverty line should get direct financial benefit from various welfare schemes. There may be change in the names of these programmes but the basic objective is to create opportunity of employment for families suffering from poverty improve agriculture, rural upliftment, food security, provide education, develop skill through training so that the economic condition may improve leading social security and may brought them above poverty line. Present central and state government have implemented and may welfare programmes. It has tried to improve living standard of poor in cities by improving geographical and infrastructural services with the reduction in unemployment poverty will reduce.

Poverty allevation programmes or schemes may be divided into five sections : (1) Wage based employment Programme (2) Self-employment Programme (3) Programmes related to food security (4) Programmes related to social safety (5) Programmes of elimination of poverty in urban areas. Presently many series of programmes are implemented in these five sections, But we will be making compiled and omnibus discussion of main programmes out of them as follows :

Major objective of following schemes mentioned below is to provide employment in the field of agriculture and irrigation, road, food security, organic farming and selling of agricultural products so that direct income is earned which will improve the financial condition of the poor.

(i) Pradhan Mantri Krishi Sinchai Yojna : Under National Agriculture Plan : there should be increase in agriculture growth rate and sectors related to it, improvement in irrigation facilities. Irrigation facility should reach every part of agricultural land, drip irrigation system should be used, along with construction of small, big, medium sized check dams to combat water problem. So that every field gets water. Such type of steps have been taken so that farmers are saved from dangers of agriculture and debt and they became free from the vicious circle of poverty by providing them employment in order to fulfill their income.

(ii) Prime-minister Farm Safety Insurance Plan : By improving farm safety insurance plan, farmers are to be helped at the time of natural calamity by providing them economic support. Government started giving bonus at the purchase of cotton and concession at loss/damage of crops. Kshtimukt Krushi bhav panch has been set up to stabilize the prices.

(iii) National Drinking Water Programme : Programmes like providing water to every field,, improving existing canal network, stop soil erosion, new tubewells for tribals, prevention of salinity have been implemented. Other than this programme of digging ponds, watershed development, construction of tanks, conservation of rain water, afforestation, constructing lining of canal, planting trees and shrubs, renovation and revitalization of check dams etc. have been started. so that people get employment in the rural areas and families come out of the vicious circle of poverty.

State Government has provide finance at low rate of interest from bank, for kharif crops cattle rearing, storing fertilizer and also taken solid steps in irrigation schemes of Central Government.

Gujarat Government has undertaken programmes for poverty elimination. Since last ten years, Government has been organizing poverty welfare fair for helping farmers to become self-reliant.

(iv) E-Nam Scheme : Under this programme agriculture market has been set up for the farmers in which farmers may get their products listed, online trader may bid from any place. Objective of this plan is to save farmers from loss faced by them due to mediators, brokers and they get

more remuneration and earn more economic profit due to competition.

Thus, such steps should be taken which develop agriculture and yield maximum returns. So that farmer remains involved in agriculture business.

2. 'From Gramoday to Bharat Uday' : Through such programmes farmer oriented plans have been made to prevent loss faced by the farmers due to wild animals damaging the crops by providing them economic help to build fencing to protect them crops, production of grass for cattle at the time for crisis or drought and to help to construct cattle shelter for, rain forecasting and discovering mineral rich regions through ultra modern satellite or drone technique. Provision is made to maintain record of land survey. They get help in the form of availability of finance at low rate of interest for mecanization of farming e.g. to produce tractor and mini tractor, help in the form of subsidy, help in construction of water tank, improving quality of plantation crops, computerization in agriculture, finance society, set up new testing laboratory for production of cotton, pulses, spices, management to see that farmers get a suitable price, making ponds, deep by removing soil from them, increasing drops and size, construction of farm pond, cleaning the cannals and reservoirs for water stroage and increasing their length, resettlement of water tank and repairing of check dams and increasing water storage capacity etc. so that, farmers may get employment during time apart from farming. At the same time permanent property is set up in the rural area. Thus, Central as well as State governments have tried to save farmers from debt by helping them through this scheme.

3. Dindayal Upadhyay Gramjyoti Yojna : This plan is an effort to supply electricity to the rural areas without any hindereance. 24×7 , day and night, providing electricity at homes and farms at concessional rates, lay down new lines to take electricity facility for 18000 villages which do not have electricity. Setting up new electricity sub-stations and helping farmers by providing subsidy to purchase equipments for agriculture sector. So that poor farmers may get a support to increase income Subsidy is also provided for obtaining electricity through solar energy and to purchase solar technical equipments.

4. Subsidy under the scheme 'Vanbandhu Kalyan Yojana for allround development of Adivasis' : Adivasi women are provided with training and guidance for live-stock rearing under 'Comprehensive Dairy Development Employment Scheme', for the development of creeper crops in agriculture and plantation, for constructing pavilions (pendals), organic farming, grading and packaging etc. Samras hostels and Smart Ashrams are also established.

5. Encouragement to Organic Farming : In this, helping farmers in registration, paying fees, help in purchasing farm products, arrangement for training and education of farmers, finance at low rate, arrangement for setting up proper market etc. along with environment protection and reduction in expenditure in agriculture sector are the major objectives of this scheme.

6. Chief Minister Village Road Scheme : Under this, planning is done regarding work related to roads. Village panchayats were helped to connect villages with one another through roads and highways, programmes like construction of toilets are implemented.

7. "MAA Annapurna Yojna : Under this programme absolute poor families and people living below poverty line in cities and villages are given 35 Kg food grains per family every month by Gujarat Government



17.2 Grain Distribution by FPS Under Maa Annpurna Programme

which is provided free of cost and the poor people of middle class are given 5 Kg food grains at low rate. In which wheat is given at the cost of Rs.2 per kg, rice Rs.3 per kg, at fair price shops 3.82 crore people who are covered under this scheme get the benefits of food security, because of which a large sum of money spent on food will be saved. Objective behind it is to bring happiness on the face of people because they would be spending their saving to purchase other things and improve their of living standard.

8. Sansad Adarsh Gram Yojna : Objectives of this scheme is to stop migration of the people from the villages to city. For this members of the parliament improve education, health, employment facilities in the village adopted by them in their constituency. Thus, they set up ideal village. Other than this-to create permanent public assets, to develop opportunities for good life, rural upliftment, taking care of cultural heritage, creating opportunities for employment through social harmony, increase in human development etc.

9. Mahatma Gandhi National Rural Employment Guarantee Act (MANREGA) : Employment oriented MANREGA programme has become popular with the slogan Our village, Our work, along with reasonable price. Objective of MANREGA is to enhance livelihood for families or adult living in rural areas of state, who can do physical labour though unskilled but are willing to work. For this purpose one person from every family is guaranteed wage employment for atleast 100 days (7 hour per day) in a financial year. The government has fixed the wage rate accordingly it pays daily wages. If after asking for work, government fails to provide employment then as per rule government has to pay unemployment allowance. In this works like work for development of village, construction of personal toilets, personal wells, work levelling the land plain, horticulture, labour work in Indra Awas Yojna, cattle shade, making organic manure, shade for cocks and goats, yard for drying fish, cleaning of cannal, works related to water storage, tree plantation on roads are included. By guaranting definite wage based employment from these to every family, government tries to improve living standard of poor people under this programme.

10. Mission Mangalam : Through this programme state government has united women from families living below poverty line in 'sakhni mandal' or 'self-helping groups'. Here they are given skill-based training so that they may generate employment for themselves through household industries circle and come out of the vicious cycle of poverty by preparing papad, pickle, agarbatti (incense stick) etc.

11. Dattopant Thegdi Vyaj Shay Yojna : Through this scheme government provides loan to artisans of handicraft and handloom cottage industries at low rate of interest to purchase raw material.

12. Jyoti Gramodyog Vikas Yojna : Objective of this plan is to provide self-employment opportunities to the unemployed in the rural areas to increase income and set up industry by giving them economic help and subsidy for establishing industrial plant, implements, electricity, land etc. With the new idea of "Start up India" Government provides training, free electricity, land and economic help, to the unemployed youth who are interested in setting up industry.

13. Bajpai Bankable Yojna : Under the programme urban and rural unemployed of age group 18 to 65, who are educated till 4th standard are given training. So that they may set up industry or carry on traditional craft. They are also given finance of fixed amount, so that they may generate self-employment.

Through Agro Business Policy 2016 state government has implemented plan to provide employment to 10 lakh people by setting up agro-food processing unit along with helping in export of processed food products so that poverty may be reduced.

Unemployment

Among current problems of India, problem of unemployment is crucial. Poverty originates due to unemployment. This is a long term problem and has got deep-rooted in economy. Maximum countries of the world are facing problem of unemployment.

Meaning Unemployment : One who is adult, whose age is 15-60 years, who is ready to work at the prevalent market rate of wages, has energy and qualification to work, who is in search of work but is not getting work, such a person is said to be unemployed. Such type of a condition in group is called unemployment. Such an unemployment which has to be faced mandatorily is called employment against his wish.

If people who demand wages more than the prevalent market rate, who are not in age group of 15-60, who are handicapped, weak, sick or old, lazy, housewife those who are not willing to work in spite of being capable are not considered as unemployed.

Types of Unemployment : Following are the types of unemployment in Indian economy.

- (1) **Seasonal unemployment :** Due to lack of irrigation facilities, irregularity in rainfall and lack of alternative employment farmers have to remain unemployed for 3 to 5 months in India. This is called seasonal unemployment.
- (2) **Frictional Unemployment :** When new technology is introduced in place of old technology, labours remain unemployed for some time. This is called frictional unemployment.
- (3) **Structural Unemployment :** Indian economy is backward and orthodox. Social backwardness, traditional orthodoxy, customs, illiteracy and lack of structural facilities are responsible for structural unemployment.
- (4) **Disguised Unemployment :** Sometimes more than required number of workers are involved in an occupation. Even if a few labourers are removed from work, no decrease is recorded in total production. So these extra labourers are said to be unemployed in disguised way.
- (5) **Industrial Unemployment :** In the industrial field if anyone has to remain unemployed for short term or long term due to changes taking place in industrial sector, such a situation is called industrial unemployment.
- (6) **Educated Unemployment :** If a person has obtained at least secondary education or degree and is unemployed he is called educated unemployed.

Proportion of unemployment in India : There is difference in state wise condition of unemployment in India. Because of indifference of employment exchange, in registering the details of people interested in getting job, it is difficult to take out exact or approximate figure. Still on the basis of figures of labour and employment Ministry of India and National Sample Survey(NSS) we get an idea about comprehensiveness of unemployment.

According to census counting of 2011, 116 million people were in search of employment. 32 Million people were uneducated unemployed and 84 million were educated unemployed. Approximately 4.70 crore people of 15-24 age group were unemployed.

According to the survey of labour bureau 2013-14 rate of unemployment in India was observed to be 5.4% and in Gujarat per 1000 people 5.4% and in Gujarat per 1000 people 12 persons (1.2%) were unemployed. In 2009-10 per 1000 people 34 persons (3.4%) were unemployed in urban area in India. While in rural area 16 people (1.6%) were unemployed. Ratio of educated unemployed was more in urban area. Rate of educated unemployment was more in urban area. Rate of unemployment in women was 7.7% in 2013.

In India more unemployment has been witnessed in states like Sikkim, Kerala, West Bengal, Uttar Pradesh, Chattisgarh, Jammu-Kashmir, Tripura. While ratio of unemployment in Himachal Pradesh, Haryana, Karnataka, Chandigarh and Gujarat has remained low. Condition of employment in Gujarat is good and noteworthy. According to an estimation 15% highly educated people are youth. 66% youth of the world, who are youth of 35 years of age live in India. If India wants to become super power on the basis of youth, it will have to change unpleasant form of unemployment.

Main reasons responsible for increasing unemployment in India are - increase in population, theoretical knowledge only, lack of practical knowledge, lack of technical knowledge or skill, failure in providing complete employment, irregularity in rainfall in agriculture area and more risk, losing interest in agriculture sector, improper irrigation facilities, lack of alternative employment during time other than agriculture season; weak condition of cottage industries, house hold industries and small scale industries, caste system, joint family system, people are forced to follow traditional business or family business, lack of courage to set up new business, flows in knowledge, skill, training and experience, immobility of labour, flawless planning of labour, low growth rate of industrial development, less rate of saving tendency. Thus decrease in rate of capital creation was there. New business industry can not be set up due to lack of investment.

Efforts to reduce unemployment : Problem of unemployment is the weakest link of our planning. Poverty and unemployment are the two sides of the same coin. Both are inter-related. Main reason for poverty is unemployment. This challenging problem has mainly affected educated youth. As a result they lost attitude of interest towards studies, negative effect on social and mental condition is seen. They become disappointed psychologically. If they remain unemployed for long time, they get involved in antisocial or immoral activities, e.g. drug trafficking, illegal activities, robberies, recovering ransom etc. Increase in social and economic inequality is there. Class discrimination begins, fall in living standard. When price rise joins unemployment, condition of the poor and unemployed becomes more narrowing and pathetic, he turns towards narcotic drugs and other addictions. Thus, unemployment has proved to be deadly for individual, family as well as economy.

We have studied about plans of government to remove unemployment while studying about poverty alleviation programmes. Let's recall them. Other than those many effective steps have been taken by the government which are as follows :

(1) By aiming high goal, economic development of 10% per year which is acceptable to all. Increasing capital investment and opportunities of employment. New fields should be opened for fast and balanced economic development along with development in agriculture sector, small and household industries, cottage industries etc. In order to increase employment government has started giving economic help, education, opened training centres through different schemes.

(2) Government should lay stress on development of units using labour intensive method for production of consumer goods, small and cottage industries, gramodyog, handloom and handicraft skill. For it encouraging policies should be implemented in the schemes.

(3) More number of people may be employed in rural area by less investment by developing new method at the rural level in which more than one crop may be taken from the field in order to remove unemployment during the time when farmers are not engaged in agriculture, to bring new land under cultivation, arranging water and electricity for every field, small and big irrigation scheme dam, check dam, ponds, canals, tubewell, activities of construction of road, activities related to agriculture, poultry, fishery, cattle rearing, dairy industry, programmes of afforestation. For this planning should be employment oriented. Employment opportunities should be increased in villages. So that villagers get enough income and working in their own village only. So migration towards cities may be

reduced and pressure on demand of employment may be decreased. Encouraging plantation agriculture, organic farming, dry farming and multi cropping, growing vegetables and fruits. Importance should be given to improvement of quality of education in villages.

(4) In order to sustain human development in rural areas health, education, pure drinking water, nutritious food, electricity, roads, banking, insurance, internet, improvement in communication and entertainment, water harvesting activities, constructing permanent public property, development of local industries and encouraging them, adopting employment oriented programmes should be undertaken. Qualitative life of rural people as well as result oriented improvement has been the main objective.

(5) In order to decrease educated unemployment and unemployment among youth, skill should be developed and employment should be provided as per the qualification. Such type of business oriented or technical education policy should be adopted, which produce skilled artisans. Curriculum of schools and colleges should be such that it satisfies the requirement of local industries. Such type of efforts should be made by providing education and training to the youth, special skills may be developed in them, quality improves along with production, employment increases, increase in income and improvement in living standard. They should be given assurance that they keep on getting employment

(6) Labour ministry of Indian government and State government have implemented ambitious programmes like “Make in India”, “Skill India” and “Digital India” to enhance knowledge, understanding, enthusiasm and work capacity of youth along with industrial development, for this educational and training programmes have been started to develop skill. Technical colleges and universities have been set up nation wide. They should provide education facility as per vocational curriculum and modern technology. Efforts are being made to fulfill requirement of employment through near curriculum in schools and colleges, vocational and technical education.

At present, Higher Institution like IIT and IIM are being established in most of the state of our country.

(7) Government has opened new areas of employment to plan manpower. Lot of employment opportunity is there in computer technology, information technology, pharmaceutical, business management, packing and processing, out sourcing, marketing, catering, event management, office management, hotel management, share-stock marketing etc. So new curriculum has been set up in the universities fulfilling local requirement. Accordingly curriculum of education, training and teaching has been changed so that it may fulfill the requirement of job in future. At the end of acquiring education, short term diploma or certificate courses have been started to fulfill the need of manpower like course in spinning, weaving, tanning, plumbing, radio, tv, fridge, mobile, A.C. repairing. As a result of revolution in the field of automobile, electronics, computer science, genetic science, aero-space, robot making new courses have been started in order to produce skilled artisians, engineers and technicians. It is tried to provide loan at less rate of interest to the entrepreneurs under ‘start up India’ for promoting new business. Mutual co-ordination has become possible because of co-operation between local industries and training institutes; so that as per local requirement supply of labour could be made for generating employment and in place of white collar job self-employment should be fostered with government’s economic help. For this purpose such an environment and proper and strong structure should be created that educational courses and educational expenses become cheaper and admission becomes easy.

(8) It is necessary that new business industry should be set up for industrial growth and generating of new employment opportunities. Investment is essential along with development of skill, co-operation, to increase entrepreneurship among youth. In order to promote opportunities of self-employment, government has started many plans for providing of financial help at low rate of interest for small investments, for various purpose to purchase implements small margin, raw material or office furniture initially, along with help for selling produced goods. Efforts have been started to provide technical and commercial knowledge, managerial skills, help. With the efforts of banks, economical help of financial institutes, economical easy loan facility local businessmen and welfare organization, women have been provided self-employment by setting up household industries. Thus, coming out of the traditional business, a new firm of members of family was prepared which expanded the horizon of new business and industrial sector.

(9) Employment exchange centres work as a chain between unemployed and owners who were in search of such youth who were looking for employment, labours, workers or educated skilled and unskilled labour. This organization provides authentic information regarding registration of educated unemployed, this place and the type of work. It gives guidance in choosing one's own career. These centers provide sufficient information through magazines like 'Rozgar Karkidi'. It provides free services through model career center and helpline number. 1800-425-1514 helps people by providing them important information, skill programme, employment fair etc. Till 2015 there were 947 employment exchange centers in our country. In which, till 2013, 468.23 lakh unemployed had registered all over the country while in Gujarat 8.30 lakh unemployed had registered their names.

World Labour Market :

When change of labours is there among nations of the world, it is called world labour market. When labourers migrate from one country to another for employment, business, training or higher education it is called movement of labour at international level. Walkout of brain power for educational knowledge, higher technical knowledge and skill development, in search of more income, more facility, better job is brain drain or migration at the international level. Because of increasing social status recently, country-wise mobility of labour become popular in a noteworthy manner. As a result of migration to other countries or due to permanent settlement of intelligent and talented people, who have spent lot of money on them facing a great flow of personalities having talent and intelligence, technical knowledge and scientific attitude. A result of globalization and liberalization, a new situation has started arising in our economy. In the present time demand for people having knowledge and skill in information technology, communication, technology, biotechnology, computer or medical has increased. Many countries are appointing such people who have special qualification and skill as trained expert labours and experts. They adopt attractive tactic and practices with high perks. Industrial firms send their employees to foreign countries to obtain required qualification, knowledge

and skill so that they many survive the competition. This is a part of international migration. Like country receives foreign exchange as a part of income due to migration of people to foreign countries for jobs. Because of the flow of foreign money in to our country in this way, problem of foreign exchange is solved to certain extent.

Exercise

1. Answer the following questions in detail :

- (1) Explain various solutions of poverty alleviation programme.
- (2) Discuss in detail the steps taken by government for poverty alleviation programme in 'agriculture sector' and programme 'Gramodaya thi Bharat uday'.
- (3) Give information about efforts made by government to reduce poverty.
- (4) Explain in detail schemes and programmes undertaken by the government to reduce unemployment(main four).

2. Answer the following questions points wise :

- (1) What is poverty? What are the characteristics of people living below poverty line ?
- (2) Explain poverty in India.
- (3) What are the reasons of origination of poverty ?
- (4) What are the steps taken by the government for social security and food security ?
- (5) Explain - 'Poors live in rich India'.
- (6) State the reasons for unemployment.
- (7) State the effects of unemployment.

3. Answer the following questions briefly :

- (1) Relative poverty and absolute poverty.
- (2) Explain about 'Agro business policy'.
- (3) Clarify MANREGA programme.
- (4) What is industrial unemployment ?
- (5) Explain the idea of world labour market.

4. Answer the following questions by choosing the correct alternative :

- (1) Which state in India has highest rate of poverty ?
(A) Uttar pradesh (B) Odisha (C) Chattisgarh (D) Bihar
- (2) What was the rate of poverty in India in 2011-12 (in crores) ?
(A) 21.65 (B) 26.93 (C) 36.93 (D) 21.92

- (3) Which scheme has been started to connect women empowerment, skill development training, self employment and market ?
- (A) Pradhan Mantri Jeevan Jyot Yojna
(B) Mahatma Gandhi National Rural Employment Gurantee Act
(C) Mission Mangalam Yojna
(D) Agro Business policy 2016
- (4) In which Indian state is the rate of unemployment found to be highest ?
- (A) Bihar (B) Jharkhand (C) Kerala (D) Chattisgarh
- (5) Which scheme was implemented under the Food Security Act in Gujarat ?
- (A) Ma Annapurna Yojna (B) MANREGA
(C) Antodaya Yojna (D) Sukanya Samriddhi Yojna
- (6) Which scheme encourages unemployed Youth with new ideas to become entrepreneur and get self-employed ?
- (A) Make in India (B) Start up India
(C) Digital India (D) Swachchh Bharat Abhiyan
- (7) The Institute which registers unemployed persons to eradicate unemployment...
- (A) Employment Exchange Centre (B) Labour Ministry
(C) Model Career Centre (D) Gram Panchayat

Activities

- Collect cuttings related to 'Poverty in India' from news published in magazines or periodicals and prepare a pictorial scrapbook.
- Collect statewise-urban and rural area data of poverty of last ten years. Prepare comparative report of one. If required use brackets , maps or graphs.
- Collect information about the rate of unemployment in India and different States number of unemployed male female from employment exchange center or by searching on internet and goggle.
- Invite experts of employment exchange centers or polytechnic or ITI colleges to your school and arrange expert lecture and exhibition on 'career guidance' and 'business oriented courses' after standard 10.
- Get two separate hand written copies prepared on problems of poverty and unemployment in India.

Among many economic and social problems of India, one is price rise. Continuous and constant rise in price in different fields of economy at a high rate is called price rise which is a problem. But price rise along with stability is beneficial for economy. Generally, increase in price results in increasing profit of organizers and producers. Because of undecided profit they get opportunities to set up new production units. Profit amount increases when production cost is less than price rise, so the producer gets encouragement for new investment. As a result, production activities, production and employment increases. Due to increase in income, producers, organizers and businessmen can increase the wages of their employee. Thus, due to increase in income, purchasing capacity increases. So, money spent on usage of commodities increases resulting into rise in the living standard and speed of economic development. So it can be said that stable price rise is prerequisite for economic development.

When there is noticeable increase in price level of commodities or services invariably and continuously at high rates, then the production of instantaneous commodities and services do not increase but supply of money increases speedily. Thus, excessive amount of money is used on comparatively less commodities, this kind of price rise condition is called inflationary situation. High disturbance in prices, expenditure, income and calculation of price of production equipment and their allocation, generates serious disparity in economy by creating chaos in money supply. In such condition, price rise acts as a hindrance in development of economy.

Price rise is not always inflationary. Many times inspite of decrease in inflation rates in economy, price of basic commodities or services used by common people increases, while the prices in other sectors show stable or decreasing behaviour.

Reason of Price Rise

Mainly two factors are responsible for price rise : (a) due to lack of instantaneous increase in production and supply of commodities and services in economy. (b) due to sharp increase in total demand of country as compared to supply, continuous price rise is seen. Following reasons are responsible for it :

(1) Increase in Monetary Supply : Supply of money in economy increases in three ways (i) by filling deficit replacement i.e. by generating new money (ii) increase in circulation of money i.e. increase in transaction of money in market (iii) to decrease rate of interest on debt.

When there is increase in money, income of people, purchasing power, effective demand of commodities and services increases but total supply does not increase according to it. So price rise is there. In order to fulfill planned and unplanned expenditures, government increases supply of money by generating new money through deficit replacement policy. Increase in administrative expenses of government, unplanned expenditure, defence expenditure or increase in expenditure of different welfare schemes and fairs, expenditure on celebrations, public or private expenditure leads to sudden increase in supply of money in market which increase purchasing power, resulting in increase of price level. Thus, increase in purchasing power becomes the reason of price rise.

No increase is there in total production or supply of commodities and services in market due to unplanned expenses of government, but due to increase in salary or allowances, supply of money increases in hands of people. Along with it, resources of production start getting more value, so income increases, leading to cumulative increase in supply of money. As a result of it, purchasing power increases i.e. total demand increases but total supply doesn't increase in accordance. This leads to price rise.

Thus, price rise is result as well as reason for increase in supply of money. The bank reduces rate of interest on credit as well as increases its reserved cash which helps it to give loan and credit at low rate of interest and mild condition which results in increase in supply of money in hands of people, which creates pressure on demand of commodities and substantially causes price rise.

(2) Population Growth : Population increases at a rate of 1.9% in India. Total population of India was 121 crore in 2011. Because of speedy increase in population of country in 2001 an imbalanced condition in demand and supply was created which led to shortage of supply leading to price rise.

(3) Increase in export : Because of increase in demand of Indian goods in foreign market, government has encouraged increase in export as a result of which availability of commodities decreases in local or internal market. So scarcity is observed. Shortage of supply against demand leads to price rise.

(4) High price of raw material : Shortage of raw material leads to increase in production cost. So, price of commodities increases. On the other side, consumers of produced goods are same workers or common people. They demand for increase in salary and when it is satisfied, there is again increase in production cost resulting into price rise. Thus, vicious cycle of price rise keeps on going on.

(5) Usage of Non-registered Currency (Black Money) : In order to save tax, many economical dealings are not mentioned in accounting book. Many people hide their high income or excess income. Thus such an income is not mentioned in the accounting book and tax is not paid on it. Such unregistered income is called black money. Because of fear of being caught for paying income tax or service tax, rather than storing money, people try to use it as early as possible and purchase unwanted things. Thus, black money has been supportive for price rise.

(6) Price rise by Government : The government increases support prices of petroleum products, chemical fertilizers, support price for agriculture crops by the way of administrative orders because of which supply of money increases due to steps taken by government to fill the debt. As a result of which price rise is there. Thus government only gives birth to price rise.

(7) Natural Factors : Production reduces due to natural calamities like excessive rainfall, drought, earthquake, epidemic etc. and human factors like war, riots, movements, strikes or industrial unrest, lockouts etc and adverse effect is seen in supply. Decrease in supply when the quantity of money remains stable results in increased pressure on demand of commodities resulting in rise in price level.

(8) Smuggling, Hoarding and Black Marketing : Many times, due to high import duty rates as well as control on import or restriction on exports, with the intention of duty evasion, secretly, without paying taxes, foreign goods are dumped in a country. This is called smuggling.

Due to speculations or rumours or predictions that prices are going to rise in future, all the sections of society, businessman, producer, consumers get involved in hoarding in more or less quantity. As a result of it, pressure on supply of that commodity is created. An artificial scarcity arises. So by increasing the price of the commodity, to increase their profit margin, the producers take undue advantage of people. This is called profiteering.

Thus, by evil activities like hoarding, black marketing and profiteering, scarcity of commodities is created in the market. This is a factor responsible for price rise.

Why prices should be controlled : Continuous price rise causes massive, far reaching and adverse effects on economy and social life of people. To avoid these effects the need of price control has arisen. We will understand the effects of price rise as follows :

- (1) The vicious circle of price rise keeps on moving continuously because of increase in profit, increase in income, increase in purchasing power, increase in demand of goods and services; lives of poor and middle class people becomes miserable.
- (2) Rate of savings and capital generation decreases due to price rise. Production of capital generation decreases due to price rise. Production of necessary commodities decrease. New business, industries, employment stops.
- (3) Foreign investment decreases. Because of increase in import of goods, foreign exchange is spent, which gives rise to new problem.
- (4) Production of necessary goods decreases so scarcity is created. Living standard of the people deteriorates, the poor become poorer.
- (5) As the production cost of goods increases in the country, they become expensive, so the cost of export goods increases. Comparatively imported goods become cheap in the market. As a result exports decrease and import increases, balance of exchange is disturbed. Imbalance is created in import and export.
- (6) Living standard of poor or middle class deteriorates because of price rise. In order to fulfill requirements, immoral activities like theft, robbery, murder, crime, betting, hoarding, profiteering, black marketing, corruption, suicide increase in the society. Moral degradation occurs in society.

Thus, inflationary price rise is a hindrance for economy. So there is a desperate need to control price rise.

Steps taken to control price rise : Total expenditure keeps on increasing continuously in economy, but production of goods does not increase with same pace. This results in price rise. Government takes steps to control price rise :

(1) Monetary Measures : (i) Bank : i.e. the Reserve Bank of India (RBI) reduces the money circulation in the economy. As a result, a leash is imposed on the spending tendency of people, thereby reducing the demand of goods, which in turn leads to reduction in prices. (ii) The RBI increases rate of interest through lending policy. Loan or credit becomes expensive which stops unnecessary capital investment or betting investment. On the other hand, the saving tendency of the people increases due to increasing rate of interest as well as there is increase in deposits, investment in different savings. Thus, due to lack of funds betting, speculation hoarding are stopped and profiteering is controlled (iii) Because of increase in bank rate, commercial banks have to increase lending rate. So, proportion of lending decreases. Due to increase in rate of interest, excess money is stretched from betting and comes back to economy in the form of savings. So rate of capital investment increases. New fields of business and employment are opened. (iv) Due to increase in reserve funds of banks, branch of commercial banks are controlled. Decrease in lending is there. (V) By selling Government securities in the open market, cash reserve of commercial banks and public is reduced. As there is decrease in supply of money in the hands of people, consumable, expenditure reduces, resulting in control of price rise.

(2) Fiscal Measures : Fiscal policy means Government's strategy with respect to public expenditure and rising revenue taxation and public loan policy. (i) Government decreases supply of money by reducing its own expenditure as much as possible along with reduction in total expenditure of the country. It postpones such plans on which rate of expenditure is high and is not lucrative immediately. It reduces administrative expenditure and unuseful expenditure. (ii) Under taxation policy, government increases taxes, when price rise occurs, so that there is reduction in the supply of spending money among people. Income tax, company tax, property tax are raised. Export is controlled and because of imposition of high rate of revenue on imported goods, cost of imported goods rises. So import sinks. (iii) **Public Loan Policy :** Under public loan policy, government tries to limit total expenditure of society by issuing loans or bringing schemes like 'Compulsory saving plan'. It takes different encouraging steps to encourage people to make savings, reduces the rate of public debt, decreases government help like giving subsidy, increases the proportion and coverage of

direct tax, imposes heavy tax on goods used by rich people and luxury items, because of which their production sinks and production of necessary (basic) goods increases. Thus, with these steps, proportion of income in hand will reduce, as a result of which demand of goods will decrease and finally prices will reduce.

(3) Control on capital investment : In order to see that capital investment behind unuseful and luxury items reduce, license or permit system is implemented and government encourages such type of capital investment in which the productive form of agriculture and industrial products increase. Betting oriented capital investment reduces. Production of essential goods increases. Production capacity increases. Such encouraging steps should be taken where by increase in rate of interest, saving instinct is encouraged so that capital investment increases. Such type of efforts have to be undertaken.

(4) Price regulation and rationing (Public Distribution System) : One of the step to control price rise is public distribution system which has been implemented in India since 1977. The objective which is to provide to low income group of society, people living below poverty line and people of low income group with essential commodities at reasonable price from fair price shop (FPS). Today approximately 4.92 lakh fair price shops are there. Prices at these shops are less in comparison to the prices in the open market. Government pays the difference between the original price and rate of items at fair price shop. This amount is called subsidy. This public distribution system has become a boon for maintaining the living standard of poor people in the situation of artificial scarcity, hoarding and black marketing, in which price rises considerably. The success of this system is mainly dependent on the setting up of an effective administration mechanism for the availability and distribution of the required quantity of essential commodities and the honesty and nature of the shopkeeper.

(5) Administered price mechanism: To prevent hoarding and to maintain the prices of essential goods at reasonable level and to ensure their easy availability, the government fixes the prices of the commodities. It asks the traders to sell the goods at the fixed prices. To keep price level under control, the Government has implemented Legislation Essential Commodities Act, 1955. In the trader does not sell goods according to the prices fixed by the Government, it can initiate proceedings under this act and penalize the trader. Government initiates legal proceedings and undertakes intensive campaigns against hoarders, black marketers, speculations, under PASA (Prevention of Anti Social Activities Act). To control price rise, Government initiates legal proceedings like regulation of stock of commodities kept in the godowns of the traders, checking, display of stock register, price register and takes strict punitive actions against the culprits. Till recently, the prices of onion, rice, cotton, cement, edible oils, petrol, diesel, domestic gas, kerosene, sugar, aluminium, iron, steel, railway freight etc. were regulated under the administered price mechanism. Even some life saving drugs are also covered under this and their prices are controlled.

Thus, efforts to control price rise are not independent or different from each other but are complementary to dependent on each other. So rather than taking scattered, one or two steps, omnibus steps will have to be taken. Only then expected results may be obtained.

Consumer Awareness : (Jago Grahak Jago)

Now a days every person is consumer in one way or the other. Many items of same features, of different brands are available in the market. Illiterate and unaware consumers do not have complete knowledge or information about diversity and alternative uses of goods. As there are several middlemen between producers and consumers, the consumer is exploited in many ways.



18.1 Message of Consumer Awareness

Price Rise and Consumer Awareness

The system wherein the goods and services that the consumer buys in lieu of money are of good quality, proper weight and at a reasonable price is known as consumer protection. Consumer protection is not just an agitation, but it is a movement of consumer awareness. Consumer awareness is a moment of consumer protection. Consumer protection is a well-organized programme for the people of the society to make them mature consumers with the help of which anti-consumer activities, exploitation and deception may be faced. Ralph Nadar started a movement in America to bring consumer awareness. Thus, he is called pioneer of consumer movement.

‘Satisfaction of consumer is our motto’, ‘Consumer is the King of market’. Such statements seem to be exaggeration and deception in the present time. Producers, entrepreneurs or traders produce things as per their ability and convenience (facility). Later on, they try to attract consumers through enticing advertisements in T.V., Radio by publishing advertisement in press continuously by mediums like website, hoardings or banners. Because of it consumer finds it difficult to purchase or choose proper commodity and is guided towards the false way and is thus exploited.

Forms of Consumer Exploitations

Consumers are exploited by the producers and traders in different ways which is given below. He is exploited by providing commodity of less weight than the one printed on the packet, by providing slightly defective or fake commodity/goods, over pricing, by providing adulterated goods which are dangerous or harmful for health, unsatisfactory after sale services, i.e. not providing construction goods or services as per pre-determined conditions. In providing electricity, banking, insurance, telephone or medical facilities, seller or trader shows negligence and humiliates consumer by cheating in selection of goods by attractive and deceptive advertisements, by adopting malpractices of selling, by selling fake goods in such a manner that they cause physical as well as mental harassment, by creating artificial scarcity and by not providing complete information consumer is cheated.

Reasons of Consumer Exploitation

Consumer is exploited because of following reasons :

(1) Consumer is himself/herself responsible : Traders, producers, organizers take undue advantage of consumers by exploiting them in different ways because of ignorance, lack of awareness, illiteracy, lack of tendency to become organized and oppose, lack of preparation and tendency to fight legally against exploitation.

(2) Limited Information : In the capitalist economy, the producers and sellers are free to produce or sell any commodity or service in any quantity. There are no specific rules regarding their pricing and quality regulation wherever they are, the rules are not followed strictly. In such situations, in the absence of true knowledge or information about usefulness of the product, quality and maintenance, conditions of use, after sale services, warranty or guarantee etc. the consumer is not given complete information about the commodity. Thus, due to limited information and lack of understanding the consumer tends to make mistake.

(3) Limited supply : When supply of product or service is not in accordance with demand, artificial scarcity is created. Thus, scarcity is created due to hoarding by traders, producers, betting or natural calamities. In such situation traders take undue advantage by over pricing. So, improper supply of commodities in the market is also responsible for exploitation of consumers.

(4) Limited competition : When a single producer or a group of producers have their monopoly in the production and sale of a commodity or service, then due to lack of other alternative, producer exploits the consumer in different ways in such limited or monopolized market. The consumer is dumped with defective services and commodities of low quality.

Consumer Awareness in Consumer Protection

There arose a need to stop exploitation of consumer in different ways to protect rights and to provide mental and physical security. In India, a description regarding consumer protection, because of misbehaviour towards consumers and their exploitation, was made for the first time in

Kautilya's "Arthshastra" which, describes misbehaviour of trader towards consumer and his exploitation. We find mention of punishment for undermeasurement of goods and adulteration or duplication.

American President John Franklin Kennedy presented four rights of the consumers on March 15, 1962 in the Parliament of America. He expressed soreness on the thought that opinion of the consumer is not heard.

International organization 'Consumers International' published notification showing rights of consumer on 15th March, 1983. So, 15th March is observed as "World Consumer Day" every year. Afterwards, in its meeting on 16th April, 1985, the UN declared 8 basic consumer rights in its bill 'United Nations Guidelines for Consumer Protection'. According to this, it recommended every nation of the world to set up effective legal structure for rights and interest protection of consumers. For this, Indian Parliament formed "National

Consumer Protection Act, 1986" which was signed and permitted by the President on 24th December, 1986. So every year, 24th December is celebrated as "National Consumer Right Day" In India.

Gujarat Government had implemented "Gujarat Consumer Protection Act, 1988" on 18th February 1988. As per this, legal action for consumer protection has been undertaken.

In 1993 and 2002 many important amendments have been implemented in India in Consumer Protection. People have wish to bring change in the age old act as per requirement of time.

Many provisions have been made under Consumer Protection Legislation- 1986 Now we shall gather information about important provisions made the act.

Legislation concerning consumer rights

'Consumer Protection Act' is a milestone in the history of social-economic Acts of India and is helpful to people. For protection of right of consumer and their interest this is most progressive and acceptable law, which provides following provisions :

(1) Related to Consumer Service : Under the above legislation, in terms of trader, commodity and service, a consumer may be defined as follows :

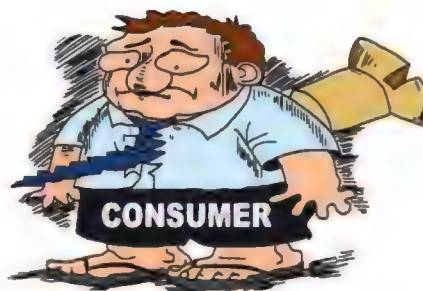
In terms of commodity, a consumer is one who has legal protection. For this, any of the following person :

(i) If a person has made payment or has promised to make payment or has agreed for any offered mode of payment in lieu of purchase of any commodity or service is called a consumer. (ii) The person who pays the value of product, either in the form of installments or by hire-purchase system or hires a service either receives a service is called a consumer.

But if any person sells, a purchased product for business or commercial purpose or provides free of cost, services or the services under personal service agreement, they are not covered under this legislation and are not protected.



18.2 Celebration of World Consumer day



CONSUMER PROTECTION ACT OF 1986

18.3 Consumer Protection Act.1986

Thus, objective of this law to see that consumers get the product or services of high quality. Along with it protection of interests of the customer are also seen.

According to the provision, if the type, quality of goods or services as well as the agreement are not as per prevailing law or provided services are defective or deficient or commodity is sub-standard quality, the consumer may complain under Consumer Protection law.

(2) Rights of consumers : Consumer commits mistake in selection of right commodity due to lack of information regarding different types of commodities available in the market and could not receive proper incentives on money spent by him. His money is wasted. He expresses regret that he has been cheated. He invites many types of diseases by purchasing edible objects of low quality, duplicate or adulterated and of low quality, which harms the health. Moral standard of society goes down due to immoral activities like under measurement, adulteration and duplication, cheating, looting in price and corruption.

Laws have been framed so that producers and traders maintain uniformity and transparency in price, quantity, quality of products. Because of the provisions, consumer becomes aware and is educated about various tricks adopted for exploiting them and how to fight against malpractices. Many rights have been granted for understanding various solutions under this act. Main objective of consumer awareness is to protect these rights. According to the law, consumers have been given six rights.

(1) Right to safety : Consumer has the right to be protected if the commodity or service is dangerous or harmful for health. He has the right to get protection for the maintenance of physical environment and quality of life.

(2) Right to get information : The consumer should have information about quality, quantity, capacity, purity, class, standard, usage, price etc. of commodities or services. so that he may be protected in the market against malpractices or corrupt practices (unfair trade practices). With the help of right to information the consumer is encouraged to behave responsibly. The consumer gets information from label, packing, advertisement, price list, government public news and reports.

(3) Right to choose : Consumer has the right to access a variety of goods at competitive rates, choosing commodity or service which could earn maximum profit and has good quality. Objective of right to choose is to confirm reasonable price, satisfactory service and assurance of quality. Consumer has the freedom to choose such a commodity which is most convenient.

(4) Right to be heard or right to represent : Under this law, such an arrangement are made in which rights and interests of the consumer are protected, represented and considered. There are also provisions to make arrangement in which non-political, non-commercial consumer society is formed having its own consumer representative, who can represent their interests properly.

(5) Right to seek Redressal : This right gives right to the consumers to make complaint against dishonest commercial practices or loss due to negligence or ethical exploitation. It also gives right to the consumer to be prevented from loss, by asking for the compensation. In this, consumer may ask for one or more than one relief like exchange of goods, return of goods, return of money, repair, without asking for charge etc. Consumer may ask for the incentive or not, but is entitled to get incentive.

(6) Right to consumer education : This right ensures that a consumer gets complete information and develops patience and skill. Factors responsible for exploitation of consumers at the village level are ignorance, lack of awareness among consumer etc. By including it in the school curriculum, efforts should be made to train consumers and improve their skill through meetings of different institutions, consumer education related discussion session, exhibitions, discourses, work camps etc. So that they may play the role of an alert consumer in the market. Consumer education is helpful in this.

(3) Duties of the consumers : As the consumers are cautious about their rights, in the same way they should show reflexes towards their responsibilities or duties also.

(1) While purchasing a commodity or service consumer should make the correct choice. At the time of purchasing a product consumer should purchase the product having good quality, reasonable price, guarantee or warranty, after sale services. He should purchase goods having standard signs like BIS, ISI or Agmark. While purchasing electrical or electronic gadgets, priority should be given to purchase of standard or branded items only.

(2) At the time of purchasing a product from many products, choice has to be made. While choosing a product, they should have all information. They should check the label and information given in the advertisement and ensure themselves like a discreet and aware consumers. As a consumer, his decision and behaviour should be wise, intelligent, calculative and bearing common sense, so that he may be protected against exploitation and cheating.

(3) It is the duty of the consumer that his conduct or behaviour towards seller or producer should be gentle and bonafide.

(4) A consumer should insist on having original bill or original receipt of items or services purchased by him. He should also insist on getting warranty card filled, signature of seller should be there along with stamp.

(5) Consumer should come together and form voluntary consumer organizations or associations at non-political and non-commercial level and with the help of these organizations they should be ready to give legal fight for solution of problems related to consumer's complaint. They should ask for representation in different government committees related to consumer. So, it is also the duty of consumer that he should fight against exploitation.

(6) Consumer should make verbal or written complaint to the officer of related department without fail. They should also take cooperation of consumer organizations and different non-profitable institutions in order to prevent or eliminate complaints related to wide interests of the consumer.

(7) While purchasing a product, consumer should not make any compromise with quality of product or its safety. He should always insist on purchasing a product after checking packing, rate, date of manufacture, batch number, weight, expiry date, name of producer, address etc.

(8) While purchasing a product, if the consumer finds that the product is adulterated, or duplicate or fake or finds decrease in weight he should immediately bring it to the notice of trader. And if the trader delays in bringing solution, then he should give an application to authorities or consumer courts asking for redressal. Thus, consumer should perform his duty as a responsible citizen.

(9) Consumer should purchase a product in sufficient quantity or number only. He should save himself from purchasing unwanted and unnecessary products by getting attracted from the advertisements or by seeing others or from sale. He should not waste money.

(10) While purchasing, weighing scale, implements of measurement, electronic instruments must be checked, whether they are correct or not. A consumer should make sure whether the tools of measurement have been tested and verified by a investigation officer or not. If tools have not been certified every year, the consumer should bring it to the notice of weight and measurement officer, Director of legal metrology and consumer affairs at the local level and if required, he should complain. This is the duty of a vigilant and responsible consumer.

(11) The seal of the gas cylinder should always be checked, whether it is intact or not. Taxi or rickshaw should be boarded only after checking the 'zero' reading of the meter. We should pay as per rate on the meter. Petrol, diesel or CNG should be filled after checking the indicator at '0000'. While purchasing kerosene, one should insist on purchasing only after the foam in the measusing can has settled down completely. Weighing should be done on that scale only which is hung on its stand. When scale is held in hand there are chances of cheating.

(12) A consumer should either himself go to consumer forum or should complain through consumer society against the negligence in the improvement of railway, bank, insurance, telephone or hospital services or for compensation for physical, mental and economical harm due to lack of services. Consumer should give details of news of judgement and compensation received on local T.V.Channel and get it published in the newspaper, so that other consumers may know about injustice done to him. By informing about the judgement, they may be prevented from being victimized. Thus, it is also his responsibility to bring consumer awareness and work for consumer education, participate.

(13) A consumer should participate in enthusiastically in different consumer awareness programmes movement arranged by consumer society, discussion or seminars. Thus try to give a thrust to the movement of consumer protection in the society.

Measure of consumer protection :

Following four types of measures have been undertaken for consumer protections :

(A) Three tier (Tribunal Courts) :

Under National Consumer Protection Act, 1986 'Central Consumer Protection Council' (National Consumer Commission) has been set up . Similarly, the state consumer forum has been set up at the state level. Under this commission, laws for consumer protection are framed. National



18.4 Measures of Consumer Protection

Consumer disputes commission has created the structure of three tier court and framed norms for actions of consumer forum or commission.

(1) District Forum : Generally, there is one court in every district which is a very important court. It studies the complaints of consumers and gives compensation to the consumer against loss. Approximately 571 consumer district forums are working in our country. In these courts, presently, claims for compensation upto ₹ 20 Lakh are filed after paying the decided fee. If the petitioner is not satisfied with the decision of district forum, he may file a complaint in the state commission within next 30 days. But before that he has to pay either 50% amount of compensation claims or ₹ 25000, whichever is less.

(2) State commission (State Forum) :

- Approximately 35 state forums are working presently.
- In these courts presently claims of compensation from 20 Lakh to 1 crore are filed after paying the decided fee.
- If the petitioner is not satisfied with the decision of State Commission he may file a complain in the national commission within next 30 days although he has to pay either 50% of the compensation claim or ₹ 35000 whichever is less.

(3) National Commission (National Forum):

- Compensation claim above ₹ 1 crore could be made here by paying the decided fee.
- This commission is a bench of 5 members.
- State commission and National commission should give the decision as early as possible or within 90 days of filing the case.
- If the petitioner is not satisfied with the decision of national commission he may file a case in supreme court within next 30 days. But before appealing it is compulsory to deposit 50 % of the compensation amount or ₹ 50,000 whichever is less.

If the person does not comply the orders given by any of court, he could be given punishment or penalty or both of them.

People below poverty line, senior citizens and handicaps are exempted from paying fee under certain conditions. They are also provided free service under “District Free Legal Service” guidance of legal aid and advocate.

(B) Consumer Society (Consumer Protection Council) : As per this act, government-recognized consumer societies have been established at taluka, district, state or national level. The consumer societies or councils are non-political, non-commercial, voluntary organizations set up by consumers. The main objective of these consumer societies is to bring awareness about consumer rights and encourage them to help government to frame policies or to protect from time to time. It keeps on reviewing provisions for consumer rights and acts. It also gives suggestions to the Government regarding need to change legislative provisions. These consumer societies provide consumer education through consumer awareness programmes, which provides guidance on main subjects like rights of consumers, duties, exploitation in different ways and how to be saved from exploitation. These consumer societies or organizations publish monthly, bi-monthly, magazines or periodicals like “Grahak, Suraksha”, “Insight”, “The Consumer”, “Grahak Manch” etc. and try to bring awareness. They are helpful in elimination of complaints of consumers.

(C) Public Distribution Systems (PDS) : Under Public Distribution System, essential commodities of good quality are provided in fixed quantity at subsidized rates, to the poor at regular interval from “Fair Price Shops”. Thus the poor consumer is saved from the exploitation in the open market from where they have to purchase goods at high rate, of low quality and less weight. Public Distribution System controls corrupt practices of trader.

(D) System Certifying Weights and Measures and Purity of Goods : For health and safety of consumers, government has set up many legal institutes which perform the task of checking the quality, quantity and purity of produced goods and certifies them.

Government of India established ISI (Indian Standard of Institute) in 1947 to regulate quality. Now, since 1986, it is known as BIS, Bureau of Indian Standard. The goods that meet the described standard and quality are allowed to use ISI mark.



**18.5.1 ISI
Institution Logo**



**18.5.2 Logo of
BIS Institution**



18.6 Agmark Logo

Even gold ornaments are given BIS mark along with purity number i.e. 916 which means quality and purity of gold is generated by certain parameters. These are BIS Mark, Gold number e.g. 916 depicts 22 carat gold, 'Hallmark' logo is given by the central government which shows the year of "Hallmark" e.g. "J" means jewellery manufactured in 2008.



**18.7 Logos to be kept in mind while
purchasing gold ornaments**

Mark of FPO (Food Product Order) is used on Jam, Fruit Juice, fruits or vegetables packed in tin.



18.8 FPO Logo



**18.9 Woolmark
Logo**



18.10 M.P.O Logo



18.11 HACCP Logo

BIS allows textile, chemical, insecticides, products of rubber, cement, electronic gadgets to use ISI Mark.

Woolmark - It is given to woollen products and dress.

MPO (Meat Processing Optimiser)- It is given to meat, mutton and products made from them.

HACCP (Hazard Analysis and Critical Control Point) It is given to processed food.

ECO : It is given to soap, detergent, paper, lubricating oil, packing material, colour chemicals, power coating, battery, cosmetics, goods used in place of wood, leather and plastic products by ISI presently called BIS.

Organizations at the International Level : Two organizations are working at the international level for standardization of products :

(1) **ISO (International Standardization Organization) :** Its headquarter is in Geneva. It was established in 1947. Its main function is to provide certification of standard according to international standards. e.g. series of ISO -9000 is given for environment management system by international organization which is certification of officers and institutions having high quality.

(2) **Codex Alimentarius Commission CAC :** This organization was set up to certify edible products. It is an international (organization) commission for food. In 1963, food and agriculture organization (FAO) and World Health Organization (WHO) established it. Its headquarter is located in Rome, capital of Italy. Its main function is to develop food standard, guidelines and code of practice, for production and international trade in food products like milk, milk products, meat, fish etc. The job work of contacting ISO is done by BIS in India, while Director General of Health Services contacts the CAC.



18.12 E.C.O. Logo



18.13 I.S.O. Logo

Who can file a complaint ? Where ? (1) Consumer himself (2) Central Government, State Government or Government Union Territories (3) Consumer society or company law or other prevailing laws (4) Representative consumer on behalf of consumers on the matter in which it is in the interest of all consumers (5) Any member of the family of person who has purchased the product or service with his permission may file a case if there is shortage of material or service or may lodge a complaint against loss.

If the producer or trader neither find solution nor show preparedness to find solution of true, correct and clear the complaint, in that case, consumer or his family members may file a case in local district forum, state commission, national commission. They may complain in supply court, office of metrology (science of weights and measures) and consumer court, consumer society, collector of- fice.

The consumer can file a complaint if the item or service is faulty or deficient or is not in accordance with the agreement or prevalent law. Thus, consumer may file a case against deficiency in quality, of type and purity of goods, less weight etc.

How to file a complaint ?

- A victim may file a complaint in simple and clear language, either typed or handwritten or through e-mail. If the victim goes to the court through lawyer then he needs affidavit. Name of applicant, address, contact number should be there in application.
- Write detailed description of complaint and give the reason for complaining clearly.
- Enclose copy of supportive evidence or documents related to accusation. Never give the original evidence.
- Enclose bill, receipt of payments. If the payment has been done by cheque, then attach counter or give details of cheque.

- Enclose copy of conditions mentioned by seller, copy of advertisement, pamphlet, prospectus. Complaint may be lodged in any consumer forum by submitting appropriate fee as per amount of compensation claim.
- Consumer may lodge a complaint within 2 years of emergence of reason of complaint. Any consumer may call on Gujarat State helpline toll free number 1800-233-0222 or national level helpline number 1800-114000 for consumer related complaint, as well as for special information about law and guidance.

Exercise

1. Answer the following questions in detail :

- (1) Discuss the reason for price rise in detail.
- (2) Discuss main two measures for controlling price rise.
- (3) Explain in detail “Rights and Duties of the Consumer” (Six points).
- (4) Discuss the provisions of consumer court.
- (5) Describe national and international institutions for quality standard.
- (6) Which precautions should be undertaken while purchasing ?

2. Answer the following questions pointwise :

- (1) Explain “Price rise is beneficial as well as a hindrance in economic development”.
- (2) “Black money is one of the reason for price rise.” Explain.
- (3) Clarify the role of ‘Public Distribution System’ in controlling price rise.
- (4) Describe the reasons of consumer exploitation.
- (5) Clarify the role of consumer societies in providing consumer protection.
- (6) Who can file a complaint ? Describe the information included in complaint.

3. Answer the following questions in short :

- (1) Why has it become necessary to control price rise ?
- (2) Describe the effects of price rise on capital investment.
- (3) What is the role of price mechanism system in price regulation ?
- (4) Who is consumer ?
- (5) Give information about ISI, ECO, FPO, AGMARK.

4. Choose the correct alternative and answer the following questions :

- (1) Government decides the prices of which products ?
(A) Vegetables (B) Medical treatment (C) Petrol-diesel (D) Dining in hotel
- (2) Increase by government in supply of what leads to price rise ?
(A) Commodities (B) Grains (C) Raw material (D) Money
- (3) Due to prediction that prices are going to rise in future what do the people do ?
(A) Black marketing (B) Profiteering (C) Betting (D) Hoarding
- (4) 15th March is celebrated as which day in India ?
(A) Consumer Right Day (B) World Consumer Day
(C) Consumer Awareness Day (D) National Consumer Right Day
- (5) Which organization has been set up by central Government for consumer related laws ?
(A) Consumer Dispute Removal System (B) National Consumer Commission
(C) National Customer Commission (D) Consumer Protection Commission
- (6) Which periodical is published for consumer education and awareness ?
(A) Insight (B) Consumer awareness forum
(C) Consumer education (D) Consumer Act
- (7) Which is the voluntary organization regulating the quality of edible items ?
(A) BIS (B) CAC (C) ISO (D) FPO

Activities

- On the occasion of “Consumer Rights day” arrange a mock parliament on topic ‘How much successful consumer awareness Act is ?
- Collect the news clipping related to price rise in recent times (last three months) and stick them in a scrapbook. Prepare a short report.
- Arrange a lecture of officers of consumer society in the school and organize consumer protection exhibition.
- Organize a programme of demonstration on adulteration, fraud and cheating in weighing commodities in your school/area or society.
- Collect packing of various items and gadgets, on which different marks are printed and prepare a report.
- Start consumers’ club at school level; arrange programmes for consumer awareness.

Change is rule of life. An infant grows slowly into an adult. From the phase of primitive man, man has developed into present complicated social arrangement. Social system and economic systems have also developed in different forms. Economics which developed to maintain a record of economic production and consumption, income and expenditure and profit-loss, has started becoming a scripture of physical well being and human development is 60-70 years. A Lot of difference is there in the quality of life of people in different countries of the world. Not only between two countries, differences are seen even between two regions of the country. In order to improve quality of life, there is a need to satisfy basic requirements like food, clothing and shelter. Afterwards need of education, health, entertainment etc. arise. In this chapter we shall study about Human Development and what is the condition of India in Human development Index.

Meaning of Human Development :

This term is often used by agencies of media, political leaders, different institutions and government. The term human development is used for expansion of human capacities, prevalence of preferences, development of freedom and human right. Human development gives indication of many other things other than education, health, nutrition and controlling resources.

Human development is a process of extending human aspirations and essential subsistence services-UNDP.

Human development is a man centered access in the direction of development. Objective of human development is to create same conditions for everybody's life, so that people may lead significant and creative life according to their talent. Earlier human development was evaluated on the basis of economic development only. Per capita income was considered as the only measure for human development. All the nations of the world concentrated on increasing their Gross National Product (GNP). However, despite achieving economic success, there was no change in the life style and quality of life of the people. Thus, it would be incorrect to believe that human development can only be achieved by economic development. So human development is not only related to income but also on how to use income. There are four important pillars of human development - equality stability, production and empowerment.

Human development, therefore is, getting opportunity to lead a successful and creative life according to one's own taste, interest, skill, intelligence, capabilities.

Human Development Means

- Ability of human being to lead successful and creative life as per as their own interest, abilities and wisdom.
- Creation of human capabilities, securing equality and getting an opportunity to select in various fields.
- Man living healthy, fine, fit and long life.
- Acquiring knowledge through information and education
- Getting opportunity for monetary benefit.
- Natural resources should be available all to improve living standard.
- Achieving qualitative life style.
- Removal of squalor and improvement of health related conditions.
- Obtaining personal and social security.
- Utilizing Human right.
- Obtaining individual and social security.
- Human Rights are inherent to all human beings so use it.

Human development is related with creation and expansion of many such opportunities.

Thus, human life includes peace, economic, social, political and cultural fields. Due to indifference or disgust towards improvement, low aspirations, illiteracy lack of entrepreneurship, suspicion, superstition, antiquatedness, orthodox, traditions along with improper use of natural resources developing countries have not been able to achieve economic and social development.

Human Development Index (HDI) :

The concept of Human Development Index was propounded by Nobel Prize winner, economist of Indian origin Amartya Sen. First human development report was published in 1990, with their help. Since then, under United Nations Development Programme (UNDP) a report is published every year. A worldwide analysis is presented on the basis of development of different nations in various dimensions.



19.1 UNDP

The idea of Human Development Index was presented in first report of Human Development published by United Nations Development programme, in which three dimensions of Human Development Index were used collectively. (1) Average age (Health) (2) knowledge and (3) living standard (per capital income). Human development Index of any nation is determined on the basis of the three of the dimension. Till 2009, above mentioned three indicators were used to determine Human Development Index (HDI) by UNDP to prepare a report. For this, a new technique is being used since 2010.

(1) **Life Expectancy Index (LEI) (Average Age)** : This is for determining health and longevity, at the time of birth of an infant predicting for that for how many years will the infant survive is known as life expectancy, for which the highest 83.6 years and lowest 20 years have been set. As per Human Development report, life expectancy in 2015 was 68 years.

(2) **Education Index (EI)** : Its two sub-directions are as follows : (i) Mean Years of Schooling (MYS). It is the years spent in the school by an adult till the age of 25, for which highest 13.3 Years and lowest zero years has been decided. So according to human development report 2015, average of schooling in India is 5.4 Years. (ii) Expected Years of Schooling (EYS) : Approximate years that a child of 5 years will spend in school. For this, highest 18 Years and lowest zero years has been decided. Average years of schooling index is 11.7 Years.

(3) **Income Index [II] (life style)** : For determining subsistence, Gross Domestic Product, per capita GDP is replaced by Gross National Income, per capita GNI. According to human development report 2015, per capita gross national income was \$ 5497 while per capita gross domestic product was \$ 5238. For calculating per capita income any of the nation's income is calculated on the basis of currency of United States, which is known as purchasing power parity.

Things to know

For calculating Human Development Index, highest and lowest value of every criterion is decided. Every index is calculated according to formula. On the basis of it Human Development Index is obtained. Its rate is between 0 to 1 for any country HDI depicts the difference that has to be covered to reach maximum 1 (one).

This difference is useful in comparing human development between various nations. On the basis of it, it could be known that country is developing in which direction, how much back and forth it is in comparison to other countries?

Human Development Report :

Since 1990, Human Development Report HDR is published every year. Human Development Index of 188 countries included in Human development report 2015, is divided into four sections as per details given in the table below. Norway (0.944) tops the list.

Australia (0.935) is placed on 2nd position and Switzerland (0.930) on 3rd position. While, Asian country Singapore (0.912) is on 11th position. India with HDI 0.609 is at 130th position among 188 countries. It means, it is included in the category of medium human development countries. In this report, Niger is at the bottom of the list i.e. at 188 position with 0.348 HDI.

Classification of countries on the basis of Human Development Index, as per Human Development Report				
S.No.	Countries with Human Development	Division Order	Human Development Index	Main countries
1.	Highest Human Development	1 to 49	above 0.802	Norway, Australia, Switzerland, Denmark, Netherlands, America, Singapore, Britain, Japan, France
2.	High Human Development	50 to 105	0.700 to 0.798	Russia, Malaysia, Iran, Srilanka, Mexico, Brazil, China, Thailand, Jamaica
3.	Medium Human Development	106 to 143	0.555 to 0.698	Indonesia, Phillippines South Africa, Iraq, India
4.	Low Human Development	144 to 188	below 0.550	Kenya, Pakistan Nigeria, Zimbabwe, Niger

Human development Index of India was 0.428 in the year 1990, 0.496 in the year 2000, 0.586 in the year 2010 , 0.604 in the year 2014 and 0.609 in the year 2015. Thus, progressive improvement has been observed.

Position of India and it's neighbouring countries as per Human Development Report.

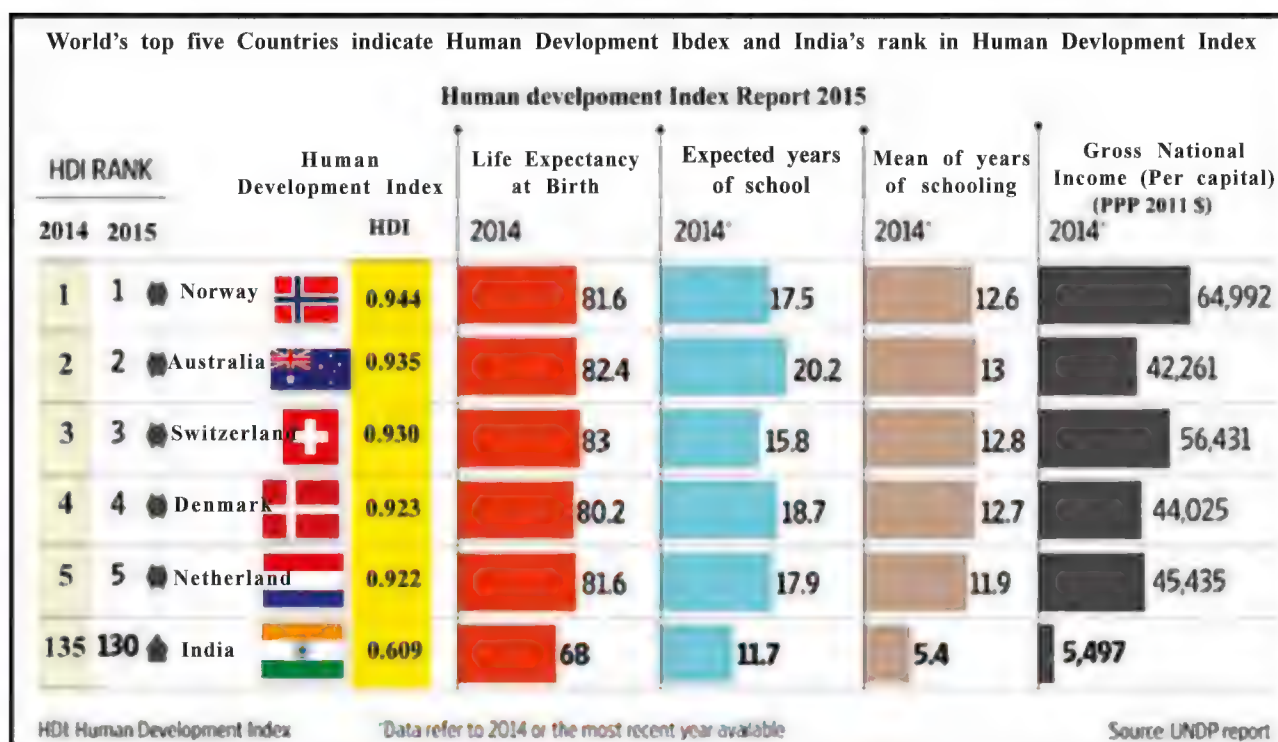
Order	73	90	104	130	132
Country	Srilanka	China	Maldives	India	Bhutan
HDI	0.759	0.727	0.706	0.609	0.605

Position of India and it's neighbouring countries as per Human Development Report

Order	142	145	147	148	171
Country	Bangladesh	Nepal	Pakistan	Mayanmar	Afghanistan
HDI	0.570	0.548	0.538	0.536	0.465

Among the neibhbouring countries of India the condition of Srilanka, China, Maldives is much better and are ranked above India in Human Development Index.

Bhutan, Bangladesh, Nepal, Pakistan, Myanmar and Afghanistan are ranked below :



19.2 Comparison of HDI Parameters of 1st Five Nations of the World

Challenges of Human Development :

On comparing 1st five nations of Human Development Report, it is evident that, in India, still a lot of work needs to be done in order to achieve all the parameters, health, education and income (per capita income) and National income. Human development is not related with materialistic resources but with live human resources.

Challenges which come in the way of progress of human development according to Human Development Index and which are specially focused are (1) Health (2) Sex Ratio (3) Women Empowerment.

Health :

Health is an important and valuable asset. In order to make an individual's family and social life great, it is very essential that a person should be healthy. In the developing countries like India, attention has been focused on population growth, common diseases, malnutrition, handicapped, contagious diseases like Aids, mental disorder and matter related to it. Expenditure on health is not only for improving quality of life but is also an investment in human resource development. India has made lot of progress in the field of health.

We have been able to make a lot of improvement in the child health and child death rate by child vaccination programme by providing them vaccination O.P.V. (for polio), B.C.G (tuberculosis), hepatitis-B, D.P.T. (Diphtheria, Pertussis and Tetanus), measles, M.M.R. and Typhoid.

A campaign has been started against deficiency of iodine, vitamin and iron. Diseases like plague, small pox, leprosy have been eradicated. Diseases like measles, chicken pox, malaria, dengue, hepatitis, leprosy, tuberculosis, diabetes, cancer, heart diseases etc have been controlled substantially. As a result man is leading long healthy life. Decline in birth rate, mortality rate, child mortality rate has been recorded. Life expectancy rate is increased.

Water borne diseases, diseases and malnutrition have raised problems for people. As the ladies, children and poor people are not getting nutritious food, suffering from lack of nutrients, basic minerals, many vitamins and proteins, their development has either stopped or their development is incomplete. Environmental pollution and poisonous gases are another challenge in our daily life. Increasing urbanization, crowded habitats have created more problems for newly raised health facility. In order to face new challenges, it has become especially important to focus on health agenda and changes to be done respiratory.

Sex Ratio :

Indian constitution guarantees equality and justice to all the citizens. According to census 2011, out of total population, 48.46% female and 51.54% males are there. If we view from this angle, female not only play a leading role, as a human resource in India but also in the world. But due to biological differences and differences in upbringing and expectations from social and cultural perspective, path of development of male and female is different. Even today, in many families, women are engaged in household chores, cooking or bringing up children. They do not have any contribution in economic earnings of family or country. They do not have any power to take decisions in family, suffer from inadequate health care, they are deprived from economical and educational rights. They experience discrimination in their clothes, games, opportunities of education, food, hangout, ethics and behaviour. They become victim of child marriage, parda system, dowry system and many other social evils due to low literacy rate among them. They are forced to become victim of child infanticide, low respect, desire to have a son, social traditions and sexual discrimination. Inequality is seen in economic, political, social, cultural and religious field.

Statistical Analysis of Sex Ratio in India.								
As per Human development Report 2015	Human development Index	Expected life expectancy at birth	Expected schooling years	Average schooling years	Per capita income \$	Participation in labour force (more than 15 years age)	Proportion of representation in parliament (2014)	Youth literacy rate (15-24 years)
Female	0.525	69.5	11.3	3.6	2,116	27.0	12.2	74.4
Male	0.661	66.6	11.8	7.2	8,656	79.9	77.8	88.4

Generally all the states in India have male dominance at high posts, high income, more profit, more salary in industries as well as jobs. Proportion of female members of Parliament is hardly 12.2% in parliament. Less proportion of female is there in Parliament, vidhan sabha, senior officers, managers, directors of companies, commercial and technical fields. Even discrimination in other fields is clearly evident.

Women Empowerment :

Women are the center of whole development process. In any of the developing country, economic empowerment is the main aspect of women empowerment. Economic freedom is essential for women empowerment. If a woman is educated she would educate a house, a society and ultimately entire nation. Our country has started taking steps in this direction. From time to time they have served at the post of Prime Minister, President and as chief minister of different states. Women are engaged in jobs like taxi driver to pilot. We have been watching women working as social worker, literateur, journalist, sports person, educator and actor on T.V. and News channels. Women employment is expanding from working as a labourer to work in business and commerce, communication and many other jobs because of increasing education, training and skilled programmers. Still there is a lot of scope for development. So for extending it, we have to make a lot of efforts.

Women Welfare Schemes :

Since, 1980, many plans and programmes related to women development in India have been implemented. National Commission for Women was set up in 1992. National Policy for empowerment of women-2001 was set up by Department of women and child development. They have undertaken programmes like strength building, employment, income generation, welfare and supportive services and gender sanitation. United Nations had declared 1975 as “Women’s Year”. It also had declared the 1975-1985 decade as “Women’s Decade”. 2002 was celebrated as “Women Empowerment year”. An Act has been amended to give them equal right in family property.

Steps Taken to Stop Women Exploitation :

For women security, 181 Abhayam Women Helpline has been started in Gujarat for helping women suffering from various types of violence. They may also even get guidance for their progress, just by making a call. Women court have been set up so that poor women get justice easily and women welfare centers have been set up to solve social, legal and employment related problems of women. Government has become vigilant to provide protection to women against physical, mental and sexual exploitation.



19.3 Abhayam Hepline Logo

By passing a law in the Parliament, working women have been given protection against sexual harassment in government office, private, business or as maid.

Various Schemes of Gujarat Government for providing equality to women :

Gujarat government has set women and child development department in 2001 for social, economical and educational progress of women. Gujarat Government has emphasized on women empowerment by stressing on 3 aspects of development of women viz. Educational empowerment, women health, women safety for uplifting women of poor and common families and women of rural area. For this purpose government has implemented various schemes in women centered gender budget.

- With the intention of encouraging girls' education, school entrance ceremony and girl education chariot festival have been started in Gujarat. As a result of it, 100 % admission and increase in women literacy has been there.
- In Gujarat, girl child in the villages having less than 35% women literacy rate or of families living below poverty line in urban areas are given 'Vidyalaxmi Bond' at the time of admission in primary or secondary school.
- Under "Saraswati Sadhna Yojna", one lakh fifty thousand girls have been given cycles free of cost. Girls going out of village to study are given facility to travel free in S.T. Bus.
- "Sabla Yojna" has been started to provide nutritional food to adolescent girls and to develop their skill.
- Gujarat government has made provision of 33% reservation for women in government. In local self-government institutions, women reservation percentage has been increased from 33% to 50%.
- Rastriya Swavlamban Yojna" is implemented to provide pension to the proletarians and destitute old people in the later half of their life. Other than this, destitute widows are given economic help so that they are not forced to lead poor life.
- Under "Mission Mangalam Yojna", government provides economic help to the women through Sakhi Mandal to make them self-reliant.
- For women health, E-mamta programme has been started in which pregnant women are registered through mobile technology and are issued mamta card. So that, death at the time of maternity may be controlled. Along with it, her regular health checkup is done and after the birth of child, health of mother and child is taken care of through vaccination programme.
- For abolition of gender discrimination Save Girl Child ("Beti Bachhao Abhiyan") has been standard and "Beti Badhao, Beti Badhao and Beti Padhao" programme has given important contribution in women empowerment.
- Scheduled caste and scheduled tribe pregnant women are provided medicines, laboratory test, operation facility free of cost under "Chiranjivi Yojna."

Various schemes have been started for women welfare by Women and Child Development Department of Gujarat. By extending the coverage of these schemes we will be able to face challenges of women empowerment.

In relation to human development, if we take a deep look into our streets and villages, we find that pregnant women are not getting proper nutrition, underweight child is born, child is suffering from malnutrition, child is not going to anganwadi or school, children studying in school may not be able to read or write, study is abandoned mid way, daughters are not sent for higher studies, youth may not be getting employment, somebody may die because of accident, somebody is suffering from some serious disease. All these things affect Human Development Index of our country. Thus if not only government but also citizens of the country become active in the direction of development, then only we will be able to compete with nations having high human development in future.

Things to know

On 14 December, 2015 United Nations Development Programme (UNDP) published human development report 2015 with the little work for human development. According to this report along with human development index following indicators are also included.

(1) Gender Development Index, (2) Child and Youth, (3) Adult Health and Health Expenditure, (4) Education (5) Command Over Allocation of Resources, (6) Social Competencies, (7) Personal Insecurity, (8) International Integration, (9) Environment, (10) Population Trends, (11) Supplementary Indicators: Perceptions of Well-being. This report may be seen on UNDP website <http://hdr.undp.org/en/2015> report. Every report is published in Hindi, English and many other languages. In india its site is <http://www.in.undp.org/>

Exercise

1. Answer the following questions in detail :

- (1) How is human development index calculated ?
- (2) Describe the challenges of human development.
- (3) In what ways are the women discriminated in India ?
- (4) Describe the work done in the field of health improvement.
- (5) Which schemes have been started by Gujarat, to give equality to women ? Explain.

2. Answer the following questions points wise :

- (1) Human development is related with which things of human life ?
- (2) Explain women welfare schemes of Indian government chronologically.
- (3) What is “Abhayam Yojna” ? Explain.
- (4) Human Development Index is affected by which things around us ?

3. Answer the following questions briefly :

- (1) What is human development ?
- (2) Which new techniques are used to measure human development index ?
- (3) According to human development report, 2015, what is human development index of India? India stands at which position in the world ?
- (4) Which neighbouring countries are ahead of India in human development index ?
- (5) Which vaccinations are given to children under child vaccination programme ?

4. Answer the following questions by choosing correct alternative :

- (1) Which international organization is working for human development ?
(A) UNESCO (B) UNICEF (C) FAO (D) UNDP
- (2) Which of the following countries has highest human development index ?
(A) India (B) Niger (C) Norway (D) Brazil
- (3) Among the countries given below, which pair is correct in decreasing order of Human Development Index ?
(A) India, Srilanka, Nepal, Bhutan (B) Srilanka, Bhutan, India, Nepal
(C) Srilanka, India, Bhutan, Nepal (D) Srilanka, India, Nepal, Bhutan
- (4) Which year was celebrated as women empowerment year in India ?
(A) 1975 (B) 2002 (C) 1985 (D) 1999
- (5) Which economist of Indian origin got Noble prize ?
(A) Mhboob-Ul-Huk (B) Amartya Sen (C) Rabindranath Tagore (D) C.V. Raman

Activities

- Collect information about human development from newspaper and discuss.
- Collect information about human development index of various countries from website of United Nations Development Programme <http://hdr.undp.org./enl-2015> report.
- Collect data regarding women literacy in your taluka and district region.
- Prepare an album of Indian ladies who have excelled in various fields.

India is a country with huge population and the largest democracy. Here people of different religions, languages cultures live together. Co-ordinating culture and secularism are its characteristics. Indian society is changing from traditional to modern society. Many changes have taken place in it. With these changes many problems have originated, which includes social, economic, political, cultural problems. In this chapter we will discuss two challenges : (1) Communalism (2) Casteism.

Many people of India, belonging to different regions, castes, languages have collectively worked for freedom of our country. It is because of their efforts that we have achieved precious freedom. It seems that harmony, unity, tolerance etc. that existed in the past has withered away, after the independence. Today, we come across some negative factors which hinder the peace and progress, such as communal conflicts, caste based quarrels, regional violence etc. This is a serious challenge to social goodwill, secularism, democratic values and national integrity.

Communalism

Religion is a matter of faith and reverence. Generally, every person follows one or the other, religion or sect. India is a secular country. Thus, communal behaviour is against the spirit of constitution. When a group of people of a religion or sect oppose other religion or sect because of any reason, communal tension arises. When the people of any religion or sect try to show superiority of their religion in comparison with other religions and give more importance to religious interest, then they look at every citizen not as an individual but from a communal perspective. Such a spirit divides the society

Even after so many years of independence, we have not been able to solve the problems of communalism. Communalism is harmful in different ways. It leads to social tension in the country. People consider their own friends as enemies or rivals, because of which atmosphere of difference and hatred is created. Communal tension leads to communal riots or quarrels. All these things are harmful for democracy, national integrity and development of nation.

Struggle Against Communalism

We know that communalism is a hindrance to the progress of individual, society and nation. Various steps should be undertaken to eradicate communalism.

- At first government should take punitive actions against communal elements to eradicate communalism from the society.
- Education can play an important role in eradication of communalism. In our education and curriculum, positive things have been included. Other than that prayers of all the religions are organized, social functions are celebrated so that the children develop respect for all the religions.

- Political party based on communal idea should not be given recognition. Special ethics are there for elections, they must be implemented and followed.
- Radio, T.V. ,Cinema are the best audio-visual aid to reach to common people. Through them, message of secularism, tolerance should be spread. Such type of programmes should be telecasted which promote national interest and nationalism.
- For the progress of nation, religious leaders and political leaders should work together to combat the problem of communalism.
- Youth must come forward to remove communalism. At the social and educational level, it should be tried that youth develops secular and scientific attitude.
- For this purpose not only government but society should also try.
- Understanding the fact that National Interest, National pride are above religion, caste, state or language, ties the people in one thread and nurtures nationalism and national integrity.

Casteism

Castes have been existing in the social system of India since its birth. Thus, we may say that India's social structure is based on casteism. Earlier concept of casteism was different from what it is today. To fulfill the basic needs of the society, the task based communities were at the base of work division. According to early hypothesis, varna system (Brahman, Kshatriya, Vaysya, Shudra) was based on four occupations. Dwelling arrangement and occupation were based on caste. As the base of occupation was source of income and some castes were getting low income so they remained poor economically.

Before the period of British rule some communities were living isolated life, in the regions where it was not easy to reach like inaccessible forest and mountainous region. Social and cultural life of these communities was different from others. They had their own prominent culture and language. Because of living separately from generation to generation, people of these communities could not develop. As a result of it their economic and social condition has remained backward.

Constitutional Provisions for Protection of Interests of the Minorities, Weak and Backward Classes :

Many provisions have been made in the constitution for the protection, welfare and progress of minorities, weaker section and backward classes. These constitutional provision have been provided to protect their interests, to eradicate social inequality and to work for their welfare and development.

- Indian constitution grants equal, social, economic and political justice to all the Indians.
- According to the Indian Constitution, there will be no discrimination on the basis of community, caste, religion, language, sex etc. It is also mentioned in the Constitution, that equal opportunity and equal status is the fundamental right of every citizen.
- Moreover, the States are also given powers so that, they may discharge the duties as a welfare State. It can impose certain restrictions on certain fundamental rights in order to protect weaker and backward class of the society.
- The right to religion gives freedom to follow any religion.
- The main objective behind providing constitutional help to minorities, weaker section and backward classes, is to offer them equal opportunities, justice and status in the country.
- Care is taken for these classes in the five years plans also.

Minorities

Minority is such a group of people which is not in majority with regard to religion or language within a certain region or regions. There is no specific definition for minority in the Indian constitution. Generally, a group of people forming less than half of the total population of a region or a country can be called minority. The concept of minority is not restricted to any religion, language or region. Just as at national level, the local and regional minorities are taken into account at the state level also. That is why the concept of minority at national level differs from that at the state level. If a community is in majority in any region or in state's total population, it can be in minority at national level. Contrary to this, a group, which is in minority in a state, can be in majority at national level.

In India minorities share equal rights with the majority. Moreover, special provisions have been made in the Constitution to protect and encourage their religion, language, culture, script etc. like -

- A national minority commission has been set up for protecting the rights, interests, welfare and for progress of minorities.
- The right to religion, especially to minorities assures them that they can make propaganda to spread and propagate their religion. The law does permit forceful religious conversion. Any educational institution, taking government grant cannot teach religious teachings. All religious communities have a right to acquire and maintain property for religious activities.
- The minorities have the right to preserve their script and culture as per cultural and educational right. Any educational institution, receiving government grants can not refuse an admission on the basis of religion, race, caste, colour or language. All the sections of the society have a right to retain and develop a language and script of their own choice, to establish and run educational institutions for the protection and growth of their culture. The state governments provide facilities to get the primary education in their mother tongue to the children of the minority.

Scheduled Castes and Scheduled Tribes

The Indian Constitution does not give a clear-cut definition of scheduled castes and scheduled tribes. This has been specially referred to by the order of the President on the advice of the governor of the respective states. In the Indian Constitution, provisions have been made to prevent caste based exploitation, to wipe out the injustice to them through equality and fraternity, and to see that they progress socially, economically, politically and educationally. According to article 341, those castes included in this schedule, are called scheduled castes.

While those castes which are included in the schedule of article 342 are called scheduled tribes. People who live mostly in the forest areas and mountainous regions are included among scheduled tribes. They live in specific geographical conditions and live a different social and cultural life as compared to others. These people are economically and educationally backward.

Constitutional Provisions

For the development and welfare of scheduled castes and scheduled tribes the following special provision are made in the constitution. These are as follows :

(A) General Provisions :

(1) According to Article 15 of the Constitution : Article 15 of the Constitution restricts discrimination on the basis of religion, community, caste, birthplace etc. In addition to this, no condition can be imposed (a) for entering shops, public restaurants, hotels and places of public entertainment or (b) for using wells, lakes, bathing places, roads, for using places dedicated for public use completely or partially under control of state government.

(2) According to Article -29 (a) If a person, living in any part of India holds his own language, script or cultural set up of his own, he has the right to preserve them and (b) a person will not be refused admission on the basis of religion, caste, language to any institution, run and maintained with financial help from the government.

(B) Special Provisions :

(1) According to Article 46 of the directive principles of the state policy, a state would take care of the educational, social and economic interests of backward class of the state. Specially, scheduled caste and scheduled tribe will be protected against social injustice and exploitation.

(2) According to Article 16 (4), if the state government feels that the backward classes are not represented proportionately in government jobs, the state government will have right to provide reservation in jobs and appointments.

(3) According to Articles 330, 332 and 334 some seats in legislative assembly and parliament are reserved for scheduled castes and scheduled tribes. There is no reservation of seats in Rajya Sabha.

(4) Seats are reserved for scheduled castes and scheduled tribes in Gram Panchayat and Municipality.

Other than these, under different five years programmes, hostels have been opened and a scheme has been launched to offer scholarship for children, counselling and training classes for competitive examinations have been started. Residential schools (Ashram Shala) have been set up for educational progress. Minimum requirements of age, fees and qualifications have been relaxed for the candidates of these groups for government jobs. Dr. Baba Saheb Ambedkar Organization felicitates those persons who work for social understanding and upliftment of weaker sections of population, their social transformation, potentiality, justice and human dignity. There is a separate division in the state and a special officer is appointed at the central level for the welfare and protection of the interests of these people. National Commission is formed at the central level for these people. Alongwith it, various schemes have been started for social, educational and economical development of these people by state and central government.

Provisions only for Scheduled Castes

(1) According to Article 17, untouchability is totally eradicated, and its practice in any form is prohibited. Any disqualification imposed due to untouchability is considered to be a legally punishable crime.

(2) According to Article 25, states are given right to frame a law or continue any existing law, which permits the public institutions for social welfare or reforms, to keep the Hindu religious institutions open

to all Hindus. Here the word “Hindu” includes Sikhs, Jains and Buddhists and Hindu religious institution includes all the religious institutions of Sikhs, Jains and Buddhists.

Provisions only for Scheduled Tribes

The Article 19(5) empowers the governors of the states to impose restrictions, in the interest of scheduled castes, over the right to unrestricted movement of people to any region, to settle down there, to acquire property or to carry out any business or trade. Such rights give authority to restrict exploitation in the tribal regions about land transactions, money lending and other exploitations of scheduled tribes and to frame special laws to protect them.

Conclusion

Various schemes and programmes have been started by the government for the development of scheduled caste, scheduled tribe and backward classes. That is why their condition is improving. Many people have got an opportunity to progress socially, economically, politically.

Terrorism-A Global Problem

In the 21st century, terrorism has become a problem for human society. It is a global problem. Terrorism leads to destruction of human rights, bloodshed, destruction, fear chaos, violence, unrest etc. Although terrorism has no connection with any religion or sect, yet, by linking terrorism with religion, terrorist are getting indulged in cowardice and hateful act. Terrorism is a hindrance in the progress of a nation. Terrorism is related to violence, which openly violates the principle of “live and let live”.

Terrorism is an organized, planned and deliberate violent act. Terrorists are engaged in violent activities like suicide attacks, throwing bomb, hiding weapons and using them, kidnapping, hijacking of plane, suicide attacks, smuggling of narcotic drugs etc.

Rebellion and Terrorism in India

The line between terrorism and rebellion is very thin.

Rebellion	Terrorism
<ul style="list-style-type: none"> ● Rebellion is a national problem. ● It is spread on the regional level against own government. ● It is carried out with the help of local people. ● Development of state is suffering from problem of rebellion is hindered. 	<ul style="list-style-type: none"> ● It is a global problem ● It is either against own country or at against other countries. It is spread at the international level. ● They may or may not get local support. ● Development of countries suffering from terrorism is hindered.

Thus, we see that rebellion originates from local dissatisfaction and there is no such restriction on terrorism. Today India is fighting against internal rebellion and terrorism.

Naxalist Movement

Inspired by the Chinese Revolution under the leadership of Mao-Tse-tung Tung, some naxalite started this insurgency in India, for the first time in 1967 in West Bengal. This fierce ideology is called Naxalism because it originated in a village Naxalbari in West Bengal. With its beginning in West Bengal, it has spread now in Jharkhand, Bihar, Andhra Pradesh, Chattisgarh, Kerala, Odisha, Tripura, Madhya Pradesh (Mountainous and forest region). There are two major organization viz. People's War Group and Maoist Communist Centre.

Insurgence in North-east

Since independence, the insurgency in North eastern India has been a perennial problem for India. Some factors which stimulate insurgency are many tribal communities, hilly and forested landscape, mutual co-operation among militant groups, international boundry at few places and indulgence of foreign agencies etc.

State	Rebellion organization
Nagaland	N.S.C.N. (National Socialist Council of Nagaland)
Manipur	K.N.F. (Kuki National Front) K.N.A. (Kuki National Army)
Tripura	N.L.F.T. (National liberation Front of Tripura) A.T.T.F. (All Tripura Tiger's Force) T.U.J.S. (Tripura Upajati Jupa Samiti)
Assam	U.L.F.A. (United Liberation Front of Assam) U.M.F. (United Minority Front) N.D.F.B.(National Democratic Front of Bodoland) B.L.T.F. (Bodoland Liberation Tiger Force)

These rebellion organizations have been struggling for the demand of separate state, to secure their own political, economic interests, or on the questions of illegal immigration. So, because of it, economic, social, administrative and political systems are damaged.

Terrorism in Kashmir

India became independent on 15th August, 1947. Two separate nations India and Pakistan were formed. Pakistan has captured some part of Kashmir after independence. Jammu and Kashmir is an integral part of India. Still Pakistan tries to capture it every now and then. It has even fought wars for this and in every war, India has inflicted a humiliating defeat to it. Terrorism has increased in Kashmir after 1988. The terrorists have terrorised people by kidnapping, murders, bomb explosion etc. to fulfill their motive. As a result of it, families of many Kashmiri Pandits had to migrate. Thousands of such families are living as refugees, outside Kashmir. Terrorism in Kashmir is supported from across the border.

The intention of the terrorists is to create fear and instability in India. India is determined to face

them firmly. India opposes terrorism not only in India but also anywhere, in any form and at any time. In order to end terrorism, soldiers of India have accepted martyrdom.

Social effects of Terrorism

- Terrorism leads to disintegration of the nation.
- Terrorism creates feeling of fear and suspicion among the people because of the activities like fear, robbery, violence etc. Its effect is felt in all age groups. Education suffers adversely in terrorism affected area.
- As a result of terrorism, mutual faith and feelings of brotherhood diminish.
- Many times it leads to communal conflicts and social arrangements are shred into fragments. Chaos and unrest is generated in the society. People can not celebrate social functions with enthusiasm. As a result of it, inter-relations connecting people are disrupted.

Economic Impact of Terrorism

- Because of Terrorism conducive atmosphere for development of business and industry is not created. So, the business and trade relations are adversely affected.
- Due to negative effect on business and industries, people migrate to other places.
- Some Terrorists organizations extort money from rich, industrialists, employees, businessmen.
- Terrorists are engaged in anti-social activities like drug trafficking and black money. As a result of it, socio-economic problems are created in the country.
- Terrorists destroy railway, radio stations, roads, bridges, other government offices etc. Crores of rupees have to be spent to re-establish them.
- Government has to spend crores of rupees for safety and protection (security).
- As a result of terrorism state and national transportation industry, tourism industry have to suffer a great loss.

Thus terrorism is socially as well as economically harmful. Thus it's necessary to solve this problem.

Exercise

1. Answer the following questions in detail :

- (1) Give an introduction of constitutional provisions for welfare and development of scheduled caste and scheduled tribe.
- (2) State the social effects of terrorism.

2. Answer the following questions pointwise :

- (1) State the steps which should be taken to eradicate communalism.
- (2) Give an introduction of constitutional provisions for welfare and development of minority.
- (3) State the economic effects of terrorism.

3. Answer the following questions in brief :

- (1) Explain the difference between rebellion and terrorism.
- (2) Write a note on naxalism.

4. Choose the correct alternative of every question given below and write the answer :

- (1) On what is India's social structure based ?
(A) Communalism (B) Casteism (C) Language (D) Groupism
- (2) On which basis is the scheduled caste decided ?
(A) Untouchability (B) Religion (C) Sect. (D) None of these
- (3) Under which article of the constitution untouchability has been eradicated ?
(A) Article 25 (B) Article 29 (C) Article 17 (D) Article 46
- (4) Which of the following is a global problem ?
(A) Casteism (B) Communalism (C) Language (D) Terrorism
- (5) Match the following and choose the correct alternative.

State	Rebellion organization
(1) Tripura	(A) ULFA
(2) Manipur	(B) N. S. C. N.
(3) Nagaland	(C) A. T. T. F.
(4) Assam	(D) K. N. F.
(A) 1-A, 2-D, 3-C, 4-B,	(B) 1-C, 2-D, 3-A, 4-B,
(C) 1-C, 2-D, 3-B, 4-A,	(D) 1-C, 2-B, 3-D, 4-A,

Activity

- Organize an essay competition on the topic 'Secularism'.
- Arrange meeting to discuss measures to stop terrorism.
- Collect photographs, news fostering national unity.
- Arrange speech of orators on India's achievement, cultural unity, unity in diversity, scientific achievements, natural specifications etc.



The change that occurs in the social structure and the social institutions is known as social change. Alongwith it changes occurring in composition of society and its functions is also called social change.

Social changes have been seen in social relations, family arrangement, marriage arrangement, in culture, in life style of people, literature, art, music and dance because of westernization, globalization and urbanization. Due to which people have become acquainted with each other's culture. Physical objects, means of luxury, use of modern implements and tools and facilities used in routine life have reached upto rural area. Change has taken place in style of houses of people, in it's building and construction. As a result of physical changes in society, living standard of people has improved. Effect of western culture is evident in the lifestyle.

Awareness about law and its need

Because of low literacy rate, lack of knowledge and understanding, people lack information about day-to-day laws in our country. As the people do not have knowledge about law, they violate law but they are not forgiven from punishment or conviction. So, it has become necessary to give basic understanding and information to every citizen.

Why is it necessary to have general knowledge about law ?

It is very much essential to have general knowledge, information and understanding of law.

- (1) People are saved from doing crime and thus saved from punishment, conviction etc, if they have general knowledge and education regarding law.
- (2) They can get guidance regarding exploitation and legal steps which could be taken against injustice.
- (3) They can enjoy constitutional rights protect individual interests and may flourish himself.
- (4) They can become informed about various legal provisions that have been made for their protection and flourishing.
- (5) His loyalty towards society, state and nation increases.
- (6) So that he may contribute in formation of society, he is not deprived of his right as a citizen and is able to perform his duties.
- (7) If everybody has proper knowledge of laws, they can lead a life of esteem and pride. Thus, it is essential to have knowledge and understanding of laws.

Rights of citizen

None of the common man can make his progress in best way, in present social conditions. Rights are the indispensable feature of citizenship. In its charter of Rights United Nations has enshrined human rights to all the human beings without any discrimination. It has stated that all the nation of the world should try that all the citizens of the nation get the rights simply and easily.

Indian Constitution has given six fundamental rights to all the citizen without any discrimination. About which we have studied in Std 9, we will revise it here. Following are the fundamental

rights of the citizens.

Fundamental Rights of Citizen :

- (1) Right to equality
- (2) Right to freedom
- (3) Right against exploitation
- (4) Right to religious freedom
- (5) Cultural and educational right
- (6) Right to constitutional remedies



21.1 Rights of Citizen

If any of the state or nation violates these rights, then in order to protect his constitutional right citizen has the right to seek justice from High Court or Supreme Court, Citizens have got this right, under provisions in right to constitutional remedies. Thus, it is called “Soul of the Constitution”. It is the duty of the judiciary to protect the fundamental rights of the citizens. It should provide simple, cheap, speedy and impressive (appealing) judgement.

Rights of Child

Children are the least protected section in our society. Progress of any nation depends on the overall development of children living in it. If the child will be educated, protected and righteous or virtuous then he will become a good citizen and will contribute in the development of family, society and nation. This type of citizens will be a boon for the nation. So child development and child welfare are the preconditions for social development. Because child is like property of the nation, so his upbringing, maintenance (child support) and development should be taken care carefully and with responsibility. Our primary duty is to take care that the child is physically healthy and able, mentally cheerful, his moral abilities are developed, he becomes a healthy, sensible and responsible citizen by promotion of physical values.

The United Nations has proclaimed the rights of children with regard to their development and welfare in its Charter of rights in 1992. These juvenile rights have been given place in our Constitution which are as follows :

- (1) Every child has the right to live without discrimination on the basis of caste, colour, language or nationality.
- (2) It is the right of the child to get proper upbringing by the parents. A child can not be separated from the parents without any solid ground.
- (3) It's a legal right of the child to get education so that he can develop his personality.
- (4) Every child has right to healthy life. The child has a right to live life merrily by participating in games and entertainment.

- (5) Every child has right to conserve his culture and live amongst his religious community.
- (6) Every child has right to protect himself against any physical or mental torture, use of narcotic drugs, inhuman purgatory protection from punishment or fine.
- (7) Every child has the right to obtain security and proper standard of living for its physical, mental moral and social development.

Right for Protection Against Exploitation

Children are very sensitive. To injure a child deliberately or accidentally, physical punishment or threatening, bitter speech or use of abusive language for insulting, or publically humiliating, sexual harrassment, excessive battering etc. physical and mental or both type of violence are considered to be child abuse.

It is learnt from Newspaper, T.V. or other mass media that children are becoming victims of exploitation by their blood relatives, kin, close friends, neighbours, close acquaintance or parents. So it is our duty that.

(1) Whenever we become aware about any physical signs of injury or by his behaviour, we should immediately help the child to get appropriate medical treatment.

(2) Generally the exploited child hesitates to reveal information about harrasment because of fear, threat or shame, hesitation or fear of social infamize and keeps on bearing exploitation. So parents should develop confidence in child and by taking child into confidence legel step should be taken on the basis of truth, facts, in order to see that person resposible gets punishment.

(3) The child who has suffered from exploitation or torture should be treated with disdain or neglecton by society or friends rather should be trated with warmth, affection and condolences and sympathy.



Child Labour and Neglected Child

Child labour is a global problem, exsiting in every country which has to be overcome quickly. All the labourers below 14 years of age are called child labourers. According to report of

UNICEF India has the highest number of child labourers in organized and unorganized sector in proportion to its population.

21.2 Child Labour

In Indian economy child labour is seen in abundance in all the sectors like hotels, factories, construction field, hazardous jobs such as cracker business or kiln, agriculture sector as field labour, animal husbandry or fishery it is also seen in service sector as servants, at tea stalls, hotels or Dhabas, in garage, in pulling cart, distributing newspaper, picking up plastic or debris, begging or cleaning roads.

Reasons for Child Labour

Condition of child labour is very pathetic in above sectors. This condition is responsible for birth of child offender. There are various factors responsible for child labour like poverty, illiteracy among parents, big family, family requirements, unemployment of adults in family to increase income of the family. For livelihood those children are forced to do labour who had escaped to cities from home are in search of shelter, orphan or destitute children or those children who have taken shelter in their relatives houses and these relatives force them to do labour in return, they are also forced to do labour in return of food.

Reason for More Demand of Child Labour

Owner of many industries or businessmen prefer to keep child labour rather than adult. Demand of child labour has increased in manifold because of following reasons :

- (1) Child labour is the cheapest factor of production. As compared to adult more work may be taken from child labour by giving less wages.
- (2) They are unorganized. Due to lack of organization, they can not raise their voice or can not protest. So child labourers can easily be exploited in various ways, without even their knowledge.
- (3) In hard and hazardous condition, work could be taken from them by paying less wages. For assigned work they are forced to work for more hours than the scheduled time by threatening or tempting.
- (4) As child labourer is easily available, so the number is more.
- (5) Due to lack of educational facilities in the rural area, children are sent to work in order to fulfill requirement of the family, at the age of schooling. Parents view them as the more earning hands and send them to work.

Thus, in the young age children are deprived of games, entertainment, rest, childhood, love of parents, warmth, care and education. Some of the children among them get involved in crime in tender age and become criminals.

Efforts for abolishing Child Labour

Many Constitutional provisions have been made by the government in order to abolish child labour, child exploitation or abuse. They are as follows :

1. Constitutional Provision (a) No child below 14 years will be employed in a factory or occupation or job. If anybody breaks the law, legal action may be taken against employer. (b) He can not be exploited in any way in childhood or teenage. He can not be devoid of moral security and physical comforts. (C) After implementation of Constitution or within 10 years government will have to arrange free education for children upto 14 years of age.



21.3 Stop Child Labour

In relation to this central and state governments have implemented law in 2009 so that children of 6 to 14 age group may get free compulsory education.

Protecting the elderly and helpless :

The problem of elderly and helpless people is universal. Old age is a natural order. It is responsibility of society to think about security and wellbeing of elderly people.

Presently, average age has increased by 4.3 years, due to improvement in health related services, modern medical facilities, medicinal treatment. In the year 2001 to 2005 average life span in India was 63.5 years while it increased to 67.5 years in 2015. In India, in the decade (2001-2011) the number of elderly people has increased by 2.75 crore. According to one estimate the number of elderly women was 5.28 crore in 2011 while the number of elderly men was 5.11 crores. The highest number of elderly people are in Kerala and minimum number is in Arunachal Pradesh. In Gujarat, the number of elderly people is approximately 35 lakhs. Because of increasing population of elderly people and increase in average life span social and physical problems are coming up.

Due to the influence of western culture and urge to live in nuclear family, children are forgetting ethical responsibilities towards elderly people, values and culture. Elderly people are compelled to live in 'Old Age Homes' due to lack of sensitization. In order to attract attention of people towards problems of elderly people, UN has announced year 1999 as the "International Elderly Year". Along with it every year 1st October is celebrated as "World Elderly People Day" at the international level.



21.4 Help to Elders



21.5 Protection to Elders

The following steps have been taken by the government for safety and security of elderly people.

- In 1999, the government evolved the "National Policy for the senior citizens". according to which elderly people are given pension. e.g. Indira Gandhi National Senior Citizen Pension Scheme and Atal Pension Scheme.
- Under various schemes for elderly people they are given more interest on the amount deposited by them in post office or bank. Male and Female are given 30 to 50 percent discount/concession in bus, railway or air tickets.
- State government has opened "Old Age Home" with grand facilities in every district. In the cities, gardens have been developed for them. It tries to bring peace in their life through music, yoga, games or mental activities.

Government has implemented, parents and senior citizens care and welfare related law in 2007 to protect them from domestic violence, exploitation or abuse. Under this provision has been made to punish

those children who harass them. The responsibility of taking care of elderly people is of their family and relatives. They have the right to get maintenance from their children. Central Government has implemented the programme to honour senior citizen in return for their contributions.

Anti-social Activities

“Such an individual or group activity or behaviour which is against rules proposed by laws in the society” is called anti-social activity.

We often see some criminal or anti-social or restricted activities in the society like murder, theft, kidnapping, robbery, cheating, trickery and cyber crime etc. which are called blue collar crimes.

On the other side white collar crimes are prevalent in the society like bribery, corruption, tax evasion, hoarding, adulteration, land encroachment black marketing.

Corruption :

Corruption is a global problem. According to the definition given by World Bank “Corruption means the misuse of the public position for personal benefits.” Thus corruption originates due to misuse of status and power by the people. Corruption is prevalent in some of the public and private sectors of Indian society. People involved in corruption, the giver and the taker, both are guilty and worthy to be punished.

Corruption - In our Country and Foreign country : Corruption prevails in many countries in small or large scale in recent times.

Conduct of corruption is seen in diverse forms. It is in the form of giving and taking money, gifts and presents in the form of costly ornaments or things or foreign trips, partial behaviour, influencing decision, favouring relatives and friends..

Corruption has adverse effects on economy or society, which are as follows :

- Because of corrupt behaviour there is degradation in the moral values and social policy regulation.
- Problem of black money originates in economy, which is a hindrance in the development of the country.
- Trust of people on laws of State, judicial process, government and administration system dealings. Honest people experience more frustration and disappointment.
- Injustice and disparity in income originates which results into class struggle. So Human rights are violated.
- Due to corruption morality and national character are at risk. Fall of the Level of economic system is there.

Steps to Curb corruption

The following are the steps to curb corruption :

(1) “Central Anti-bribery Bureau” was established in 1964. Its chief function is to investigate the allegation against the government official who are involved in corruption. Corrupt people are caught by it red-handed and are punished by them.

This is a separate department of the government of Gujarat. Its headquarter is in Shahibaug Ahmedabad. If common people have any corruption related problem they may call on helpline Toll-free Number 1800 2334 4444.

(2) **Corruption** : To stop corruption Indian Government formulated “Anti Corruption Act, 1988”. Objective of it is to provide clean public life and to stop misuse of position or power.

It is compulsory for every public servant, high official, politician to declare information regarding their property before assuming and the post. If the property of a person increases more than his appropriate income during his working tenure, it is considered as an offence and punishment may be announced for him. In such cases government confiscates such property.

(3) “Right to Information - 2005” and “Citizens Charter” have been issued with the help of which the government employees have to promise to complete administrative work in stipulated time period, by eliminating delay in their own working area and the work under their power and to make the administration transparent and simple.

(4) Recently central government has enacted Black Money Act - 2005 in which corruption is regarded as crime. Other than this changes have been made in FEMA (Foreign Exchange Management Act), Money Laundering Act as well as in section 132 of Custom Act. Efforts have been made to curb corruption and find black money by appointing Lokpal and Lokayukt in each State.

(5) Gujarat Vigilance Commission Gandhinagar has undertaken departmental investigation for the corruption and misuse for power by government officials.



21.7 Right To Information Act.

Right to Information Act, 2005 : On 15th June, 2005 Central Government had enacted Right to Information Act. It is applied to all the States of India except Jammu and Kashmir. This act is not applicable to secret services of the country, institutions dealing security and safety, institutions promoting unity and integrity and foreign ambassador's office. On 5th October 2005, according to the above legislative provisions, Gujarat government has implemented the rules regarding Gujarat Right to Information Act, 2005.

The base of this legislative has been to acquire transparent, clean, simple and quick administrative operations and to seek public co-operation in it. According to the provision of this legislative and any citizen may approach higher official of the department and ask questions to get proper information about his pending work or implementation of schemes, or for success or status of public oriented work.

How to obtain information

As per this right, applicant has to pay fixed fee (presently Rs. 20) in cash or postal order or pay order or non-judicial stamp along with application format, in order to get information. This application may be self signed, typed or in the form of email to the concerned department. Person from the family included in the BPL list doesn't have to pay any fee or charge for copy. There is no need to mention why information has been asked for.

Concerned Assistant Public Information Officer (APIO) gives a copy of receipt of the received application, to the applicant after putting serial number (ID number) in the application. After that

whatever correspondence has to be made regarding application, ID number was to be mentioned in that.

APIO will give direction within 30 days of accepting application for acquiring information. If any copy is demanded by the applicant, then it could be obtained by paying fixed fee or charge decided according to the legislative AIPO may refuse to give information as per legislative. If the required information affects the sovereignty of the country or influences national interest and security, or is related to secret issues or leads to contempt of court or is in connection with scientific secrets or promotes crime then.

Provisions for Appeal

If the concerned department does not extract the information within 30 days or refuses to give information then offended applicant may appeal to Public Information Officer (PIO) within 30 days of rejection. For this applicant doesn't have stipulated to pay any fee. If within the stipulated time period, the decision of the first appeal does not come or the applicant is refused to be given required information, the offended applicant may make a second appeal to State's Chief Information Officer within 90 days.

Provisions for Fine

If any information officer refuses to give information without giving reasonable grounds or hides information with ill intention or intentionally gives improper or incorrect, misleading information or destroys information, the concerned information officer is fined, fixed charges per day for delay in providing information.

For any query, special information, guidance, related to use of Right to Information Act, first time in the country, helpline number 99240 85000 has been started which helps us all the days in working hours except public holidays. In addition to this, civil right letter has been declared, due to which a deadline is fixed for the solution in the concerned offices, with the help of which, status of the application may be inquired. The Gujarat government has started common service portal, on which a citizen may apply online, verify documents and make payments for about 28 services and may inquire the status of application 24 × 7 hours. This Act is a revolutionary step to put off corruption.

Law regarding Right to Free and Compulsory Education 2009(RTE 2009)



21.8 Right To Education

Central Government implemented law regarding right to free and compulsory education for children in 2009, As per this law Gujarat government proclaimed "Law Regarding Right to free and compulsory Education" on 18th February, 2012.

What is the need of this Law ?

According to 86th amendment in Indian Constitution, primary education has been made free and compulsory for all the children of age group 6-14 years. This is a prominent step in the direction of developing human capabilities of

children. With the objective of physical, mental and all round development of children, necessary educational opportunities have been created and which also meet the demand of qualitative primary education.

Keeping in mind, education and health of the children, schooling facilities and physical facilities, specific norms have been set under this law and accordingly classroom, laboratory, pure drinking water, electricity, arrangement of midday meal and quality and qualification of teachers and standard of recruitment, provision for grant given to the schools have been fixed which are as follows :

- (1) According to this law every child between the age group of 6 to 14 should get admission in the school close to his locality. Children who do not have birth certificate as age proof can not be refused admission in the school by anybody.
- (2) Although the child may have attained 14 years of age and if he has not completed primary education, in such cases he could be imparted free education.
- (3) At the time of admission, the age of the child should be 6 years and if he doesn't have birth certificate, then hospital records, age related affidavit of parents should be taken as age proof for admission.
- (4) All the students should be given admission without discrimination.
- (5) Any kind of fees like capitation fees, admission fees or any other type of deposit can not be taken.
- (6) At the time of admission, interviews of children or parents should not be taken. Admission should not be given on the basis of income or educational qualification or capabilities of parents, any kind of admission test of parents should not be taken.
- (7) For the education of children of age 3 to 5 years a revolutionary step has been taken for the first time, by taking nursery under the law and making rules for special training of pre-school teachers, their courses, curriculum and evaluation.
- (8) According to this Act provision has been made for the children of weaker section and backward classes (SCs. and STs.) who are interested in studying and their families fall in the category of BPL should be given admission in government recognized private primary schools. As per order, it is compulsory that 25% students of standard 1st should be of these sections of the society.
- (9) School teachers are not allowed to take private tuitions.
- (10) All the under qualified teachers of the school should obtain academic qualification within 5 years.
- (11) Any child who has not completed his primary education can not be terminated from school until being transferred.
- (12) In the private primary schools the fees of S.T. and S.C. children is paid by the government as per fixed conditions.
- (13) For the compliance of provisions of this law a scheduled management, tribunal or state council has been provisioned. For the breach of this act the Director of the School may be fined or recognition of the school can be terminated.

National Food Security Act, 2013 (RTF-2013) :

Food security means “every person gets nutritious food for remaining active and for healthy life and procurement of food”.

This bill was implemented on 5th July, 2013 by Central Government.

Objective of Food Security Bill :

(1) To satisfy the demands of food of the increasing population of the country, other than this, ensuring quality and quantity of food and providing it at low rate.



21. Food Security Act. 2013 Grain help at Fair or Free Price

- (2) To curb malnutrition among people and children, important steps should be taken and encouragement should be given to increase production of nutritious food.
- (3) To make Public Distribution System (PDS) very strong, transparent and simple.
- (4) To provide food security, to the families, those who are in the top order of Antyodaya Yojna and BPL list and to stipulate nutritious food in proper quantity and at concessional rate.
- (5) To help the pregnant women and feeding mothers to get nutritious food.

Some Legislative Provisions

- According to this act and “Maa Annapurna Yojna” to the needy, middle class poor families of urban and rural areas are provided grain at subsidized rate. The Antyodaya families are given 35 Kg of grains free of cost.
- As per this law beneficiaries can buy wheat at ₹ 2-00 per Kg, Rice ₹ 3-00 Per Kg and Coarse grain at ₹ 1-00 per kg in fixed quantities and fixed time. Good quality grain is provided under public distribution system on fixed conditions.
- At the time of maternity Central Government would pay ₹ 6000 as help to mother.
- According to this bill food security allowance would be given to the beneficiary in place of grains.
- As per this Act every month sugar, iodized salt, kerosene and edible oil (twice a year) are provided at subsidized rates by Gujarat government to Antyodaya and BPL families through the ration shops.
- State Governments would update list of rich (leading) families and improve upon and list of these families (on the name of women in family) will be publically displayed in Gram Panchayat, Gram Sabha, Ward Sabha, E-gram or fair price shops or office of Executive magistrate Website of supply department.

- Steps like Bio-metric identity, epic card, bar code, ration card or food coupons and taking image with webcamera have been started to improve and strengthen public distribution system, in order to make distribution system corruption free.
- Under this bill “Internal complaint preventive mechanism” has to be set up. With a view to removal of complaints “Nodal Officer” has to be appointed for regulation and control of grain distribution system. For the purpose of complaining “Rajya Ann Ayog” to be set up in State and Food Commissioner has to be appointed. Thus, under various provisions of “National Food Safety Act” as per “Maa Annapurna Yojna” approximately 3.82 crore needy citizens are provided grain at concessional rate. Such type of welfare schemes have been implemented by the state Government.

Exercise

1. Answer the following questions in detail :

- (1) Which juvenile rights are included in India Constitution ?
- (2) Describe the problems of the elderly people and provisions for their protection and welfare.
- (3) Explaining the objectives of right to information, explain the process of obtaining information.
- (4) State the main seven provisions for right to free and compulsory education.
- (5) Discuss in detail various provisions related to frameworks for food grain distribution and public distribution system, under national food security act.

2. Answer the following questions pointwise :

- (1) Explain main factors responsible for social change.
- (2) Why is it necessary to have general knowledge about laws ?
- (3) Explain “Child development is a pre-condition for economic development”.
- (4) Write about government efforts to curb corruption.
- (5) Describe the objectives of food safety bill.

3. Answer the following questions briefly :

- (1) Why is child labour is more in demand ?
- (2) Mention the fundamental rights of the citizens.
- (3) Describe various forms of child labour.
- (4) Corruption is one of the causes of price rise. Give reason.
- (5) Mention the important provision of “Maa Annapurna Yojna”.

4. Choose the correct answer and write it :

- (1) Which is the main factor responsible for social change in India ?
(A) Conservative traditions (B) Public Opinion (C) Westernization (D) Literacy
- (2) Who declared manifesto of human rights ?
(A) Great Britain (B) United Nations (C) UNICEF (D) World Bank

- (3) When is “World Elderly people” day celebrated ?
(A) 8th March (B) 1st October (C) 1st April (D) 15th June
- (4) Which of the following information may be refused to be given ?
(A) Election Commission (B) Government Schemes
(C) Judgement (D) Matters related to sovereignty
- (5) Which things are forbidden in the law related to free education ?
(A) Admission without birth certificate (B) Facility of special training
(C) Admission without entrance test (D) Capitation fee at time of admission
- (6) Which new aspects have been implemented to strengthen public distribution system ?
(A) Barcoded Ration Card (B) ATM Card
(C) Bio-metric identity (D) Election identity card

Activity

- Make a survey of child labourers in your locality. Prepare a report on their family, education, type of work, exploitation or persecution.
- Visit Old-Age Homes of district and prepare a graphic report about problems of elderly people, their activities and the facilities they get.
- Arrange an awareness rally against child labour on the occasion of “Children’s day” (14th November).
- Make a comparative study of rates, quality and distribution system of grains, oil, sugar, salt etc. on fair price shops and other shops. (On the basis of information of last two years)
- Evaluate your primary school on the basis of provision made under “Right to free and compulsory education” and prepare a report. Also request the management to remove the shortcomings.

